Primitive Hearths in the Pyrenees

Ruth Otis Sawtell & Ida Treat

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Primitive Hearths in the Pyrenees

MONTARDIT

Primitive Hearths in the Pyrenees

The Story of a Summer's Exploration in the Haunts of Prehistoric Man

by

Ruth Otis Sawtell

and

Ida Treat

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PREFACE

When we first met in Paris, a chance word proved magic —"the Pyrenees."

Before one of us there rose poplar-plumed valleys, jagged peaks, and peasant farms deep-shadowed by the ancient traditions it had been her avocation to pursue. To the other, Pyrenees meant Paleolithic caves. Then and there we decided that we would explore together this haunt of our earliest known ancestors and follow wherever the trail might lead. We took stock of our training and interests. France had become the home of one of us. After an early acquired *doctorat* from the Université de Paris, she had gone back to America and an assistant professorship at Western Reserve, but France drew her again. Much of the time since her return had been spent in the Pyrenees of Ariège, boyhood home of her husband, the artist and third member of our Expedition. The other, just arrived *via* a traveling fellowship, had brought theory and enthusiasm for things prehistoric gathered during three years as research assistant at the Peabody Museum of Harvard and graduate student at Radcliffe.

During the months that followed, we refreshed and acquired knowledge of prehistory in library, museum, and amphitheater. Then, at the beginning of the summer, we went down to the Pyrenees. For four months we dug steadily and systematically in the *Tuto Biouleto,* the Violet Hole, a small cave at Montardit, Ariège. We interrupted

the work at intervals to visit prehistoric caves and stations of Ariège, Lot, and Dordogne, guided in most instances by the discoverer or excavator of the site.

Our own cave is situated in a limestone ridge of the Plantaurel, which, five miles away, houses the famous Paleolithic caverns of Tuc d'Audoubert and the *Trois Frères*. Here we excavated hearths of the Azilian people, remains of animals, implements and ornaments of flint and bone belonging to the period of transition between the Old and the New Stone Ages. The culture—first recognized at the Mas d'Azil, another neighboring cave, which gave its name to the epoch—had been found in various parts of southern France, but the men of the epoch were unknown. So when we uncovered two graves containing human remains possible for detailed examination we felt that our long days of sifting and grubbing had not been in vain.

All these precious documents we transported to Paris and studied in the laboratories of paleontology, prehistory, and anthropology. The result of this research, reported to the American Anthropological Association in December, 1925, is about to be published in France by *L'Anthropologie* and in America by the Peabody Museum of Harvard University.

In presenting this informal picture of primitive hearths in the Pyrenees, we wish to express our gratitude to scientists and friends whose encouragement and collaboration have made our work possible. In France, we are particularly indebted to Professor Marcellin Boule, who from the first has aided us with unflagging interest and friendly counsel; and to Professor Réné Verneau, and Professor Henri Breuil of Paris; the Abbé Cistac, the discoverer of the Violet Hole; Count Bégouen, M. Max Bégouen, M. Vézian and M. Cazedessus of Ariège; the Abbé Lemozi of

Lot; M. Peyrony of Les Eyzies, Dordogne; and the members of the Municipal Council of Montardit. And in America we owe special thanks to Professor Earnest A. Hooton of Harvard University and to Mrs. William G. Farlow of Cambridge, Massachusetts, whose generous interest in prehistory made possible the presence of one of us in the Pyrenees.

R. O. S.
I. T.

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Primitive Hearths in the Pyrenees

Primitive Hearths in the Pyrenees

CHAPTER I

TUTO BIOULETO—THE VIOLET HOLE

TOURISTS "do" the French Pyrenees from St. Jean de Luz to Luchon. Invalids frequent the high sanatoria that are scattered through the cork groves between Bourg Madame and the Mediterranean. But few travelers know the intervening wall which stretches its ragged crest from the cone of Canigou to the ice-capped Maladetta. Here are no giant hotels and few railroads. Green slopes and greener valleys, beech forest, pine forest, grassy "alp," stony waste, and, towering over all, the naked granite peaks with their circling flight of eagles and the chattering, fluttering companies of mountain crows. There the Mont Vallier thrusts its head and shoulders above the clustering ridges of the Castillonnais, forming the distinctive skyline of the Pyrenees of Ariège.

Seated at the foot of the marble cross that marks its summit, one has the impression of dominating the world. To the south lies Spain, an arid terrain of sand and stone; but before one extends the plain of *la douce France,* fertile and green, stretching east and west and northward to limitless horizons. Close under the

rocky wall crowd the foothills, overgrown with lavender and heather, cut in zigzags by the limestone ridge of the Plantaurel, a mountain range in miniature. Beyond, the last green ripples sink out of sight where the Garonne River sweeps its broad arc across the lowland of Toulouse.

These were "our" Pyrenees. We knew the low valleys—their red roofs, their poplars, and the clear swift

WHITE PARTRIDGES OF THE VALLIER

streams with their lively population of red-finned *cabots*. We knew the plateaus—the twitter of quail and the whirr of partridge, and higher still, the crashing progress of the wild boar and the heavy flight of grouse through autumn beech woods. We had angled with the six-meter rods of the country along mountain torrents and sent our casting lines whizzing across the still surface of high trout lakes. We had sat with shepherds in their stone huts before crackling fires of juniper boughs; and far above the grazing herds

we had climbed to the stony land of the white partridge and the chamois.

But these "our" Pyrenees had still another aspect. One cloudy April morning we were trout fishing in the valley of the Aston. Climbing for hours beside the torrent, we dropped an occasional line in deep rock pools or whirling eddies along the current. The valley ran with water. It slid in sheets over black boulders and fell in cascades from the heights above us. Snow lay in patches among yellow beds of daffodils, but up on the peaks where the sun shone it was melting. From time to time came a sound of distant thunder, audible above the noise of the torrent.

"Avalanches," said Paul, adjusting a trio of wriggling maggots on his trout hook. "That means the end of the day's fishing." Even as he spoke the stream seemed to grow in volume. The clear water turned milky; bits of wood and dead leaves tore past in the current. We put away our rods. It was cold down in the valley in the wind of the torrent and the draft from the snow fields.

"Suppose we climb up towards the sun." An abandoned logging trail led up the left slope of the valley among the beeches, slippery with water and offering a precarious footing on stretches of shale. An hour's steep ascent brought us to the upper rim of the forest. We could look straight up the valley to the Pic des Estagnous and the pass into Spain. But the sun had disappeared. We had scarcely come out of the last fringe of pines when a storm broke over the mountains.

Primitive Hearths in the Pyrenees

It was an April storm, hail, rain, and sleet—a furious blast with crashes of thunder which set the mountains rocking. Bent double beneath the gusts, we peered anxiously about us for a projecting ledge of rock, anything that might serve as shelter. A few rods away a hole opened in the mountain side; we gained it with all haste. It was a fair-sized hole which penetrated for several yards into the face of the cliff, its entrance partially masked by clumps of juniper and rhododendron.

With our hooked hunting knives we tore off branches of juniper. In a few minutes a hot white flame sizzled and crackled against the wall of the cave. Out-of-doors the storm roared on. A thin sheet of rain closed the opening of our shelter like a thin gray curtain beyond which nothing was visible. Casting about for stones to build a hearth, the man of the party lifted a flat limestone fragment from its bed in the clay floor. Something that lay beneath it caught his eye.

"We are not the first to make a fire here." On his palm lay a splinter of charred bone and a piece of coarse gray pottery.

We had uncovered a Neolithic hearth. Here the herdsman of the New Stone Age had found a shelter when his flocks grazed in the high summer pastures while far below in the valley the first grain fields yellowed under the August sun. Useless to dig here for traces of an older civilization. The Paleolithic hunters, the men of the Old Stone Age who inhabited the region before the peaceful invasion of the first agriculturists,

had never climbed so high. To them the cave in which we sat, together with the stony heights above us, belonged to an ice-locked country of perpetual snow and great glaciers whose slow progress downward was to leave deep scars on the granite mountain side. The

THE CHAMOIS OF THE PYRENEES

Stone Age hunters dwelt at a lower altitude, on the broad plateaus and in the limestone caverns that pierce the ridges of the foothills.

"This takes me back a good many years," Paul's eyes grew reminiscent, "to the days when with the good old Abbé of Montardit I used to scratch around

in every hole in the Volp valley. For you don't have to come up so far in the mountains to find caves. They are all around us in the Plantaurel. If it had not been for the war—" He frowned. There was no sound in the cave but the crackling of juniper boughs and the hissing of trout on their grill of green rhododendron twigs. "It would be good to come back to it again.

TROUT OF THE ASTON

Ten—twenty—fifty—a hundred thousand years! It gives you a splendid perspective. We have lived so completely in the present since 1914. . . ."

"Where did you do your digging?"

"At Montardit. There is a series of rock shelters along the cliff directly beneath the church. The Abbé has gone to another parish, but our particular cave is still there, if the peasants haven't carried it away.

There is a rumor that after they heard there were 'ashes,' they went up and carted them off to 'fertilize' their fields. Much good that stony mass must have done their crops!"

* * *

A few days later we were climbing an abandoned path of the Plantaurel, the chain of hills that runs from east to west across the departments of Ariège and Aude. Above us the purple and gray of a medieval village crowned the ridge—Montardit, a walled free town of the ancient province of Couserans, and beneath it ran the line of rock shelters, never yet explored, which we hoped might have served as shelter to our far-away ancestors of the Old Age of Stone. At our left a cliff rose abrupt over the fields of the valley bottom, once the basin of a lake. Between close-clinging bushes we caught glimpses of deeper shadows—chinks in the limestone, crevices, holes choked with brambles and fallen rock, hints of gallery and chamber, and at last, plunging through a thicket of dense undergrowth, we uncovered a great double archway.

"The *Tuto Biouleto,*" Paul announced as he crossed the threshold. Beyond the archway lay a high gray chamber beneath an irregular vault of rock cut by jagged shadows, blue to mauve, which had given the cave its patois name—*Tuto Biouleto,* the Violet Hole, The floor of hard-packed earth and rock, with here and there a tuft of vivid green fern, was dry except

for the far right corner, where water dripped from a moss-grown stone.

Across the rear wall of the cave, about two feet from the floor, ran a horizontal green line, a mark left by the old floor level before the peasants of the district, twenty years previous to our visit, had carted away the bone-littered earth to their fields. Relics of the Bronze Age, and perhaps remains of the New Stone Age as well, had gone to make up that ineffectual stony "fertilizer." Was anything still left?

"Pottery, at least! And plenty of burned bones!" We bent over the limestone fragments thick underfoot. In the dry left corner we chose a spot for a preliminary trench. Along the cave wall, stones, bones, and earth were welded together in a dense rocky mass—"breccia" —which would necessitate chisel and mallet to dislodge it from its bed.

But among the loose stones that strewed the floor we set to work. Broken rock, snail shells, dusty gray powder streaked with black—ashes and charcoal, the whole cave was a vast hearth.

"You know, hands are lots more convenient than tools." The speaker thrust her fingers into a dark hole under the rock. Instantly she withdrew them with a sharp exclamation.

"What was that?"

We struck a match. At the back of the hole something gray, about the thickness of a man's thumb, moved with a curious stretching motion like a large angleworm.

THE HILL OF MONTARDIT

THE PYRENEES OF ARIEGE THROUGH THE ENTRANCE OF THE VIOLET HOLE

"A viper!" Paul slashed viciously with his knife. "Luckily for you it is still stupid with cold."

We continued our digging more cautiously, using sticks and pocketknives instead of fingers. Beside us as we worked the earth heap grew. At the end of an hour our Basque *bérets* were filled to the brim with bits of bone and flint. We stopped to count:

Canine of a wolf
Jaw of a wild boar
A dozen pieces of Neolithic pottery
Innumerable flint chips
Three unmistakable flint tools, one retouched, the other showing traces of use

"Do you know what I think?" Paul regarded the trench, which instead of descending vertically shelved steadily backwards under the rocky vault of the cave. "This cavern, what we can see of it, is merely the top of a hole. It may go down for yards, perhaps as far as the river, or it may open into other galleries that connect the whole row of rock shelters of which this is to-day the largest. Men may have lived here for thousands of years, leaving their record in one archeological layer upon another. At any rate it looks as if it were well worth excavating."

Across the little trench the two women nodded their approval.

"We shall need one workman for the heavy digging. That, with the three of us, will be sufficient for a beginning. If you agree, the Expedition can start work when we come down from Paris in July."

Primitive Hearths in the Pyrenees

The "Expedition"! Through the double archway of the cave entrance we could look across the valley with its spring meadows and blossoming apple trees to the snowy mountain range topped by the familiar silhouette of Mont Vallier. In the flanks of "our" old Pyrenees lay a world still unexplored.

CHAPTER II

MAN AND THE OLD STONE AGE

THE express Toulouse-Paris carried us northward through a panorama of green—rivers and their files of budding poplars, meadows scattered over with primrose and *claire-fontaine;* and rosy orchards which tossed gusts of fragrance through the open window. From south to north *la douce France* quivered and stirred with spring.

In the fertile plain of the Garonne and on the high gray slopes of Quercy, men were busy in the vineyards. We flashed across green valley floors between cliffs honeycombed with shallow caves. That was Dordogne. They had begun plowing in Sologne—brown furrows cut through stretches of marshland and stretches of forest. Miles of spring wheat rippled the flat lands of the Beauce.

Vineyards, wheat fields, the forest with its age-old logging trails and clearings—there lay the record of man's activity from the time when, ten thousand years ago, at the end of the Old Stone Age, the hunter laid aside his tools of chipped flint for the polished stone axe and, nomad that he had been, became a tiller of the soil. Ten thousand years! But that is only the

last chapter of the story. Still farther back the record goes, written on the walls and in the floors of caverns, buried deep in the alluvium of rivers—tales of the hunters of reindeer, bison, and mammoth, tales of the hunters of rhinoceros, sabre-toothed tiger, and the great cave bear—the complex history of those far-away ancestors of ours, the Men of the Old Stone Age.

For tens of thousands of years the record stands, reaching back into the past, to the very dawn of the era that geologists call Quaternary—and there it disappears in shadow. The origin of man is still a mystery. No one yet knows when or where it was that the ape-man first left his abode in the trees to walk on two feet on the earth and pit brain and arm against mightier beasts than he in a struggle for supremacy. It is probable that man did not originate in Europe, over which so many invasions have swept like a succession of great waves to die out at last against the barrier of the Atlantic. But until the prehistory of Africa and the East is better known, this can only be an hypothesis. What scientists have learned from the study of geological layers, together with the flint tools and fossil bones contained within them, is that men have lived on the continent of Europe for at least one hundred thousand years. Race after race has made its appearance there, some to vanish leaving scarcely a trace, while others have left their stamp on the men of Europe to-day. The story of man's development cannot be represented by a single line. It is a composite of lines, stretching back, constantly crossed and

intermingled, to where the threads are lost in the still unknown past.

According to geologists, the Quaternary era itself—the first known age of man—is only the last chapter in the history of our planet. They divide the millions of years that precede into four great ages. The first, or beginning of things, when the first earth deposits were made in the primitive seas of the globe, they call Archean. No estimate can be made of its length. The Archean layer, shaken by ceaseless convulsions, contains no fossils. Followed the "primary" era, which lasted many millions of years, an age of spineless creatures, fish, and a few primitive four-footed beasts. The succeeding or "secondary" era, which is supposed to have been of shorter duration, belongs to the great reptiles, while the fourth or Tertiary age saw the appearance of birds, mammals, and perhaps man, and extended over a period of probably two or three million years.

Scientists have long tried to find proof that man existed during the latter part of the Tertiary era. Given the slow working of all evolution, it is incredible that man should have reached abruptly the stage of development at which we find him in the next or Quaternary age. But as yet no evidence has been brought to light which may be considered as conclusive. After years of discussion over a series of supposed flint tools—"eoliths"—discovered in Tertiary earth layers in France and England, scientists have not yet agreed that the form of these primitive flints was given

them by other than natural causes. The problem of Tertiary man has yet to be solved.

The Quaternary era was not only the first known age of man. It was an age of ice, of mighty glaciers which made their way down from mountain tops and from the Arctic regions and which, during the years of their greatest extension, covered two-thirds of Russia, north Germany, Holland, and the British Isles as far south as the Thames. The spread of the great European ice sheet did not take place in one unbroken movement. Geologists count four distinct glacial epochs. Each advance of the glaciers brought about an era of intense cold, which in turn was followed by an interglacial period of warm or temperate climate during which the ice fields receded. It is estimated that two glacial epochs had already passed over Europe when the Quaternary opened; its dawn coincided with the third advance of the glaciers. In the opinion of many scientists, the interval of time that elapsed between the third and the fourth and last advance of the ice sheet, dates the first known presence of man on the continent of Europe.

The climate was warm and damp. A rich vegetation covered the surface of the earth. Through wood, meadow, and marsh wandered great game—elephant and rhinoceros, hippopotamus, giant deer, bison, and wild ox. The brown bear, hyena, wolf, and the terrible sabre-toothed tiger lurked in cavern and forest. The men of the age, nomadic tribes of hunters, lived in the open, camping on low plateaus and terraces

FLINT HAND AXES

Chellean above; Acheulean below. Scale, 1/3.

above the full, swift streams, along the shores of which they gathered flint nodules and chipped them into primitive tools. We find those first flint tools to-day in the alluvium of river valleys, buried sometimes thirty feet or more below the present earth surface. For the most part they are crudely cut hand axes—*"coups de poing"* the French call them—bulky, almond-shaped cores of flint, chipped on both sides and varying in length from two and a half to eleven inches. Seen in profile, their borders are sinuous. When flint was lacking these men utilized other hard stones—quartz, quartzite, and at times sandstone. The north of France has yielded the most important traces of these first prehistoric camps. The valleys of the Somme and Seine alone have furnished thousands of flint tools. Chelles, a town on the Marne near Paris and the site of one of the earliest discovered camps, has given its name to the period of the Old Stone Age that produced the crude hand axe. This first certain stage of man's activity is known to students of prehistory as the Chellean epoch.

The epoch directly following the Chellean differed in few respects from its predecessor. It was an era of transition between the warm climate of Chellean days and the wave of glacial cold which was to follow. Archeologists have named it Acheulean after the prehistoric camp site of St. Acheul, near Amiens in the valley of the Somme. The almond-shaped hand axe remained the characteristic tool of the period, but it was flatter, more symmetrical, and of better workman-

ship than the clumsy Chellean implement. Seen in profile, its borders are straight. The Acheuleans also used flint flakes struck off a parent core and "retouched"—a row of fine chips removed—along the rims to give a cutting edge, the so-called "Levallois flake."

THE ACHEULEAN LEVALLOIS FLAKE

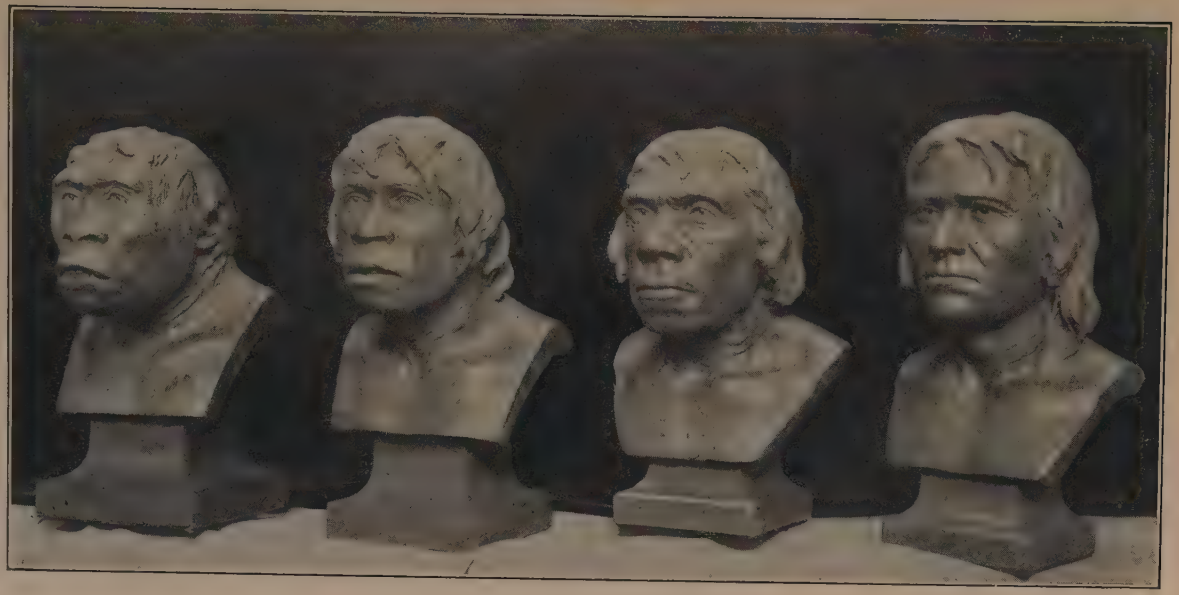
The Chellean flint industry and its perfected or Acheulean form are widely distributed over the world. The typical almond-shaped tools have been found throughout Europe, in North and South Africa, and as far east as India and Japan. France alone has traces of Chellean and Acheulean camps in sixty-three of its ninety departments.

Who were the men who shaped the heavy flint axes of Chelles and the flattened flint tools of St. Acheul? For all its hundreds of Chellean and Acheulean camp sites France has not yet yielded a single human fossil

of the hunter tribes that peopled its river valleys and plateaus during the early years of the Paleolithic or Old Stone Age. As for *Pithecanthropus erectus,* the enigmatical ape-man discovered in early Quaternary earth layers of Java, he can in no way be associated with the flint implements of the first known phase of human industry. Until the discovery of the "Heidelberg jaw" scientists were not able to attribute a single human fossil to the period that produced Chellean and Acheulean flints.

In 1908 a human jaw was found in a sand pit near Heidelberg, Germany, at a depth of seventy-nine feet below the present surface of the earth. The jaw was massive, chinless as that of an ape, but the teeth were those of modern man. It would be difficult to estimate the general physical qualities of an individual from anything so fragmentary as a jawbone. However, a detailed study of the bone together with the geological stratum in which it lay has convinced men of science that the owner of the Heidelberg jaw was a primitive type of man who lived at the very beginning of the Chellean epoch.

In 1912 a second human fragment came to light in England. Archeologists discovered parts of a skull and jawbone in a gravel bed at Piltdown. Along with the human bones were found flint tools and fossilized animal remains. Some scientists place the man of Piltdown in the Chellean, others in the Acheulean, epoch, but all agree that this second primitive human type dates from the beginning of the Old Stone Age.



FOUR STAGES OF PREHISTORIC MAN

Left to right, *Pithecanthropus erectus*, Piltdown, Neanderthal, Cro-Magnon. After restorations modeled by J. H. McGregor. Scale, 1/8. Courtesy of the American Museum of Natural History.

Although it is difficult to make a satisfactory portrait of the Chellean and Acheulean camp dwellers because of the fragmentary evidence, there can be no doubt as to the physical appearance of the men who spread their civilization across the face of Europe during the period that followed. These were the men of Neanderthal, a race which has been known to science ever since the discovery of the first skeleton three-quarters of a century ago.

The man of Neanderthal was the first cave dweller. As the last great ice sheet crept down over Europe, the climate grew steadily colder. It became increasingly damp. Heavy snowfall and constant rain washed over the valley slopes, swelling the rivers and filling the hollows with alluvium. Men could no longer camp in the open under a scanty cover of branches and skins. They sought refuge in natural shelters—under overhanging rocks and in caverns which until then only wild beasts had inhabited. They did not venture far into the inner recesses of caves, partly from fear of the wild things that might be lurking there, but partly, too, because they had not yet learned to light their way with lamps and torches. In the cavern entrances they built great bonfires against the cold, fires whose traces we find to-day in the first layer above the original clay floors of the caves.

In their search for natural shelters the men of Neanderthal abandoned the plains and plateaus for the rocks of the hill country. In France the mass of population shifted from the river valleys of the north

to the rocky highlands of the center. The gray cliffs of Dordogne with their hundreds of caves and rock shelters became the "capital of the prehistoric world." Le Moustier, a shallow rock shelter of Dordogne, has given its name to the civilization of the first cave dwellers.

To a man of the Mousterian period life became a more complicated thing than it had been for his Chellean and Acheulean predecessors. He was obliged to hunt not only for food but for warm clothing as well. As his needs grew more complex, his tools also became more varied. They were generally of smaller size than those used by the Chelleans and Acheuleans. A point and a scraper were the two most characteristic forms. The first was a triangular-shaped implement with two cutting edges, a handy little tool which could be attached to a shaft or held between thumb and finger like a knife. The scrapers, rounded or oval-shaped for the most part, often had the sharp border cut in a series of saw teeth. Mousterian man also learned that the edges of split bones could be used for piercing, scraping, or removing tiny chips from flint. He made no effort to shape a bone implement but utilized fragments of long bones whose knobby ends made convenient handles.

As the climate grew colder, Mousterian man could no longer, like his Chellean ancestor, count upon roots and wild fruit for a portion of his diet. He became almost exclusively an eater of flesh. Of the great beasts that had roamed through marsh and forest when

MOUSTERIAN FLINT TOOLS

Three forms of scraper and a point. From the rock shelter of Le Moustier, Dordogne. Scale, 2/3.

the Quaternary era was young, the hippopotamus had disappeared. A long-tusked hairy mammoth had replaced the southern elephant of Chellean days, and with it had come a new variety of rhinoceros whose thick woolly coat afforded ample protection against the cold. Horse, bison, and wild ox were plentiful. Mousterian bear hunters pursued their quarry high into the snow-covered mountains. In the cave of Drachenloch in Switzerland traces of their fires and feasts have been uncovered at eight thousand feet above sea-level.

Home from the hunt, the Mousterians huddled close about their great campfires, in a litter of charred and split bones—marrow being considered a great delicacy—and the countless chips of their flint industry. The life of Mousterian man centered about the cavern; it was his home and his workshop. And frequently it became his tomb.

In 1856 the little cave of Neanderthal near Düsseldorf, Germany, yielded the first authentic skeleton of Mousterian man. It was that of an individual of short stature, whose curved leg bones, together with the forward thrust of the skull on its axis, seemed to indicate that the man walked with knees continually bent and head shoved forward. This posture, combined with certain peculiarities of skull—retreating forehead, heavy brow ridges, and a powerful, relatively chinless jaw—must have given him a decidedly ape-like aspect. However, he was possessed of a brain larger than that of the average European to-day—a

fact which enabled him no doubt to cope successfully with the constantly increasing problem of existence. His jaw, very similar to that of the man of Heidelberg, revealed him as a probable descendant of Chellean man.

In 1885 another Mousterian skeleton was uncovered at Spy in Belgium. Since that date similar finds have been made in France, notably those of the skeletons of La Chapelle-aux-Saints, La Quina, and La Ferrassie. To-day there can be no longer any doubt as to the identity of the cave dwellers who lived at the beginning of the last advance of the glaciers. Mousterian man and the race of Neanderthal were one, a race which spread its culture throughout Europe during the early part of the last glacial period, but which died out with the close of the Mousterian epoch, leaving no known descendants.

By the end of the Mousterian epoch the period of heavy rain and snowfall had ceased. The climate had grown dry but intensely cold. The forest dwindled into rare and scrubby growths. Herds of reindeer and wild horses wandered over the snowy plains, pasturing during the brief summer season on coarse tundra grass. The mammoth and woolly rhinoceros abounded. Only the great beasts of the caverns—the cave bear and the cave lion—had become rare, hunted from their lairs by the men who had sought shelter there.

It was at this time that a new race made its way into Europe, coming, it is thought, from Asia or North Africa, spreading the girdle of its culture about the

entire Mediterranean, and pushing northward through France, Germany, Austria, Poland, and Russia. These were tall men, with straight, high foreheads, well-developed chins, and a brain capacity surpassing that of man to-day. With their arrival the civilization and the race of Neanderthal disappeared from the continent of Europe. An inferior people, reduced physically and perhaps numerically by severe climatic conditions which were to try the vigor of the hardy newcomers, the Mousterians proved no match for the invaders. They were exterminated in battle or driven out of the country.

Its mastery undisputed, the new race took possession of the caves and rock shelters from which it had evicted the former owners. In the caverns of southwestern France, where the new civilization—to which the name Aurignacian has been given, after the type station of Aurignac—reached its highest point of development and has left its completest record, the earth layer containing relics of its culture lies directly above that of the men of Neanderthal.

Like his Mousterian predecessor, the Aurignacian was a cave dweller and a hunter. But there the likeness ends. When he tracked the wandering herds of reindeer and the woolly mammoth, it was not solely to obtain their flesh for food and their warm hides for clothing. Equally precious to him were the ivory of tusks and the horn of antlers. Where Mousterian man utilized sharp bone splinters, the Aurignacian made himself tools of bone. He fashioned javelin points

AURIGNACIAN IMPLEMENTS OF BONE AND FLINT

Above, two types of bone javelin point, knife, and keeled scraper; below, burin, scraper, and keeled scraper. From the rock shelter of Laussel, Dordogne. Scale, 3/4.

with a split or beveled base, long knives of reindeer horn, slender awls and borers, and needle-like fish-hooks sharpened at either end. He also shaped one enigmatical object whose use has not yet been determined—a flat section of reindeer horn, its broad end pierced by a large hole. It has been variously interpreted as a ceremonial staff—*"bâton de commandement"*—and a tool for straightening arrows.

AURIGNACIAN MURAL DRAWING OF THE WOOLLY RHINOCEROS

Cave of Font-de-Gaume, Dordogne. After Breuil.

The development of the bone industry gave rise to a whole new series of flint tools: "keeled" scrapers (little planes with rounded beaks), borers and drills, knife blades tipped with scrapers or finely retouched points. The burin or graving tool made its appearance, armed with a sharp angle for incising bone, horn, ivory, and even stone.

Aurignacian man had one quality that distinguished him in a striking fashion from his predecessors on the continent of Europe. He was an artist, the first known

artist in the long history of man's development. More highly endowed with æsthetic sense and ability than any "uncivilized" race yet discovered, he had little of the preoccupation of later peoples for the careful ornamentation of tools and personal effects. The smooth white walls of the caverns drew his attention, and there

AURIGNACIAN MURAL ENGRAVING OF A REINDEER
Cave of Combarelles, Dordogne.

—thousands of years before the Chaldeans, Egyptians, and Greeks—he left records in color, line, and relief, certain of which have never been surpassed in all the history of art.

In the caves of the Pyrenees, Lot, and Dordogne, we can trace his progress from the first crude attempts at drawing—grouped points and lines, or the outline

of a hand in red or black—until at last, master of hand and tool, he painted the dappled horses of Cabrerets and sculptured the reliefs of Laussel and the Venus of Lespugue.

Lighted by the flicker of a torch or the dim glow of fat smouldering in a stone lamp, the Aurignacian artist made his way far underground, through many

AURIGNACIAN MURAL ENGRAVING OF A MAMMOTH
Cave of Combarelles, Dordogne. After Breuil.

a perilous passage along chasms and over subterranean lakes, carrying his colors in a tube of bone or spread on a flat stone palette. Then, having found a rock surface relatively smooth, he traced with flint, color, or often a mere finger tip on the soft clay coating of the cave wall, the image of his totem or of the game animal he hoped to kill, marking the flank of the latter with a V-shaped sign of the arrow or the vertical slash of a knife wound. With graphic precision he fixed

THREE AURIGNACIAN VENUSES

Above, the Venus of Lespugue, back view, in ivory; scale, about 3/5. Left, the Venus of Willendorf, in limestone; scale, about 3/4. Right, the Venus of Mentone, in crystalline talc; scale about 2/5.

the animal in movement, movement which his keen hunter's eye had registered with photographic rapidity —the charging mammoth, the galloping horse, the bison checked in his onrush by arrow or javelin. He devoted little attention to realistic details that preoccupied cave artists of a later period. In a few bold strokes he gave the essential character of his subject—a technique simple and sure, and one which has marked all great periods of graphic art.

The Aurignacian artist drew few human figures; the majority of his engravings and paintings represent animals. Where human forms occur, they are with rare exceptions merest caricatures—grotesque shapes, like masks for dances or rituals. Nearer representation was reserved for sculpture. And even there the nature of the object modeled often necessitated a stylized technique. The remarkable series of female statuettes discovered in Aurignacian culture layers all appear to have a very special religious significance. They are little goddesses of fecundity. Every one of them—a limestone figure from Willendorf, Austria, a second in crystalline talc from Mentone, a third in ivory from Brassempouy near the Atlantic end of the Pyrenees, and last of all the lovely little ivory Venus discovered in 1922 at Lespugue in the Garonne valley —every one of them represents the same type of woman. They are faceless, slender of neck and limbs, with breasts, hips, thighs, and belly conspicuously exaggerated. Given the frequency with which the sign of fecundity—the female genitalia—appears on the

walls of Aurignacian grottos, it seems justifiable to interpret the figurines as symbols of an Aurignacian cult rather than representations of an ideal human form.

Five low bas-reliefs of limestone found in the rock shelter of Laussel in Dordogne show a more realistic technique. The two best known represent the athletic figure of an archer and a woman with pendent breasts, short legs, and reed-like arms holding a bison's horn. Both figures are nude, a rule which applies to all human representations in Aurignacian art. Only the little Venus of Lespugue wears a curious triangular-shaped drapery hanging below her hips in the rear.

We have no means of knowing what sort of clothes were worn by the men and women of the period, but there is no lack of evidence as to their ornaments. Every Aurignacian site has yielded fragments of necklaces and bracelets made of perforated teeth, pebbles, shells, and little bones; and occasionally artificial teeth have been found, cunningly fashioned out of ivory and perforated like the others. Lumps of black manganese and red, orange, and yellow ochre seem to imply that the Aurignacians painted their bodies. They used colored pigments in preparing their dead for burial. Skeletons of the period are generally colored red from the bed of peroxide of iron in which the body had originally been placed.

Aurignacian burials have been uncovered in England, Austria, Poland, and Spain, but the most important discoveries have been made in France. That at Cro-Magnon in Dordogne has particular historical

AURIGNACIAN SCULPTURED RELIEFS OF MALE AND FEMALE FIGURES

Rock shelter of Laussel, Dordogne. The scale of the male figure is about 1/5, that of the female, about 1/7. After photographs by Lalanne.

interest, since anthropologists have adopted the term "Cro-Magnon" to designate the race that brought the Aurignacian civilization to Europe. Other Cro-Magnon tombs have been found at Solutré, at Combe Capelle, and in the Grimaldi caves on the Mediterranean shore near Mentone.

With the appearence of the Cro-Magnons and their Aurignacian culture in Europe, man's physical evolution ended. The men of the two periods that followed the Aurignacian and concluded the Old Stone Age differed in no essential respect from their Cro-Magnon predecessors, who to-day may be considered as the direct ancestors of modern man. The two final phases of the Paleolithic Period are purely archeological divisions, based on changes in the flint and bone industry and in the evolution of art.

The civilization immediately succeeding that of the Aurignacians, neither so widely diffused nor of such long duration as its precursor, has been named Solutrean after the prehistoric camp of Solutré on the sheltered sunny side of a great rock ridge in eastern France. An invasion coming from the east may have brought in the new culture. Solutrean stations are frequent in Central Europe but lacking in the region of the Mediterranean. As for the men of the period, judged by the rare burials that have come down to us, they showed the same physical characteristics as the Aurignacians.

The distinguishing feature of the Solutrean epoch was the perfecting of the flint industry. The Solu-

treans made few bone tools. Symmetrical flint points, carefully chipped on one or both faces, replaced the bone javelins and lance heads of the Aurignacians. The narrow "willow-leaf" point and the broader

SOLUTREAN WILLOW- AND LAUREL-LEAF POINTS
Scale, 1/3.

"laurel-leaf" formed the typical flint tools of the period. Only one new bone implement made its appearance—the needle pierced with an eye, which occurs for the first time in Solutrean culture layers.

The period was not remarkable for its art. The flint-working Solutreans must be regarded as artisans

rather than artists. A few carved ceremonial wands, a crude statuette or two, and an occasional wall engraving made up their only contribution to the artistic movement which began with the Aurignacians and was destined to complete the cycle of its evolution during the final epoch of the Old Stone Age.

In the course of the Solutrean epoch the climate of Europe grew steadily colder. An arctic growth of lichen and moss replaced the thick prairie grass. The hardy reindeer predominated among game animals and wandered in great herds down to the very shores of the Mediterranean. Chamois and mountain goat, driven from high altitudes by the snow, lived in the plains and hills. The mammoth and woolly rhinoceros had both become rare. The supply of wild horses, that favorite game of the Aurignacians, was rapidly dwindling.

As centuries passed, Solutrean stone culture lost its importance. Men began to abandon the gem-like faceting of flint for a substance more easily fashioned. There was a renascence of bone and horn manufacture. All the Aurignacian bone tools had come into use again and were utilized together with Solutrean flints well before the dawn of the great Magdalenian epoch which was to spread its civilization from Spain to Irkutsk and bring the Old Stone Age to its close.

Who were the Magdalenians? A people of cave dwellers, hunters, and fishermen; a people of artists and clever artisans, closely allied in physical appearance and customs with the Cro-Magnons of

Aurignacian days. The rock shelter of La Madeleine in Dordogne gave its name to this last of Paleolithic civilizations. It lies in the picturesque Vezère valley, only a few rods from the Mousterian type station of Le Moustier, and was one of the first sites to furnish

MAGDALENIAN FLINT TOOLS

Left to right: scraper, burin, double scraper, combined scraper and burin. The three smaller tools from La Madeleine. Scale, 1/2.

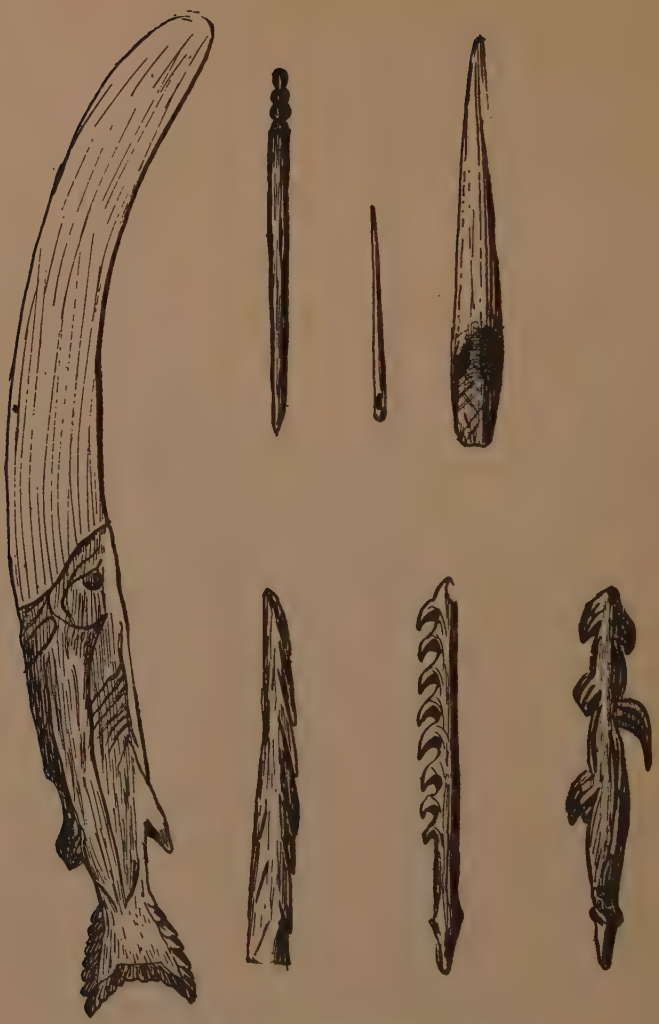
a complete cross section of the life, industry, and art of the concluding phase of the Old Stone Age.

The Magdalenian made no exquisite willow- and laurel-leaf points, but he was fully as clever a workman as the stone-cutters of Solutré. No prehistoric period is richer than the Magdalenian in flint tools of excellent manufacture, ranging from a half-inch to eleven inches

in length according to the quality and quantity of the flint supply. Like his Aurignacian ancestor, the Magdalenian hunter fashioned bone points for his darts and lances, but he continued to use slender points of flint as well, many of which were notched at the base for convenient hafting.

His typical stone tool was the burin, of which he made many varieties—long, strong gravers for cutting bone splinters for tools or engraving cavern walls, and finer forms for carving ivory and horn. Some burins were double; others, combined with scrapers. Of flint scrapers, there was an infinite variety, from thick little Aurignacian-like planes to the neatly rounded ends of knife blades. The Magdalenian had picks for stone-cutting, saws, awls, bores, and drills—in fact, all the tools required in the making of weapons, tools, clothing, ornaments, and works of art.

But it was especially in the working of bone and horn that the Magdalenian excelled—the manufacture of javelin points, daggers, knives, needles, fish-hooks, and that new barbed implement, the harpoon, which became the typical bone implement of the period. Attached to a shaft, the harpoon was thrown like a dart or shot from a bow. The earliest harpoons had irregular saw-tooth edges, but the later forms, made of reindeer horn, had a single or double row of carefully cut barbs. Darts and harpoons were frequently ornamented with patterns of fine lines or delicate engravings of animals. Much of the best work of this sort was done in the decoration of ceremonial wands and



MAGDALENIAN BONE IMPLEMENTS

Left, an engraved knife; above, pin, needle, and javelin point; below, three harpoons. Scale, 2/3.

dart-throwers, the latter having generally the form of animal figures carved in ivory or horn. The Magdalenians made a variety of things in ivory—buttons, pendants, whistles, amulets. And often the hunter-

MAGDALENIAN DART-THROWER OF REINDEER HORN

From the Mas d'Azil, Ariège. Scale, about 1/3. After Breuil.

artist worked over little objects which could neither be used nor worn—animal shapes with contours cut away, statuettes, or, sketched on the smooth cheek of a pebble, the image of one of the beasts that he hunted.

But like his Aurignacian ancestor, Magdalenian man found an outlet for his æsthetic sense in something

MAGDALENIAN SCULPTURE OF A HORSE

One of a frieze of six on the wall of the rock shelter of Cap Blanc, Dordogne.

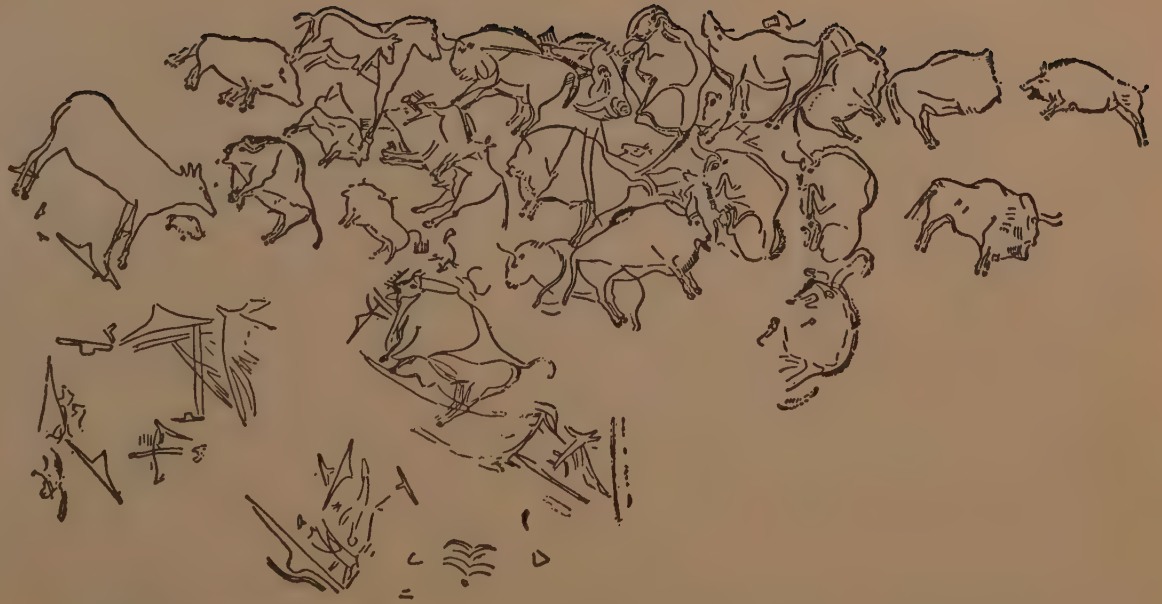
vaster than the mere embellishment of weapons or the carving of ivory images. He enriched the rock shelters and caves of Dordogne and the French and Spanish Pyrenees with the remarkable series of his paintings, engravings, and sculptures. The latter are generally of larger dimensions than those of the Aurignacian artists, and aside from a few statuettes in ivory and bone no attempts were made at human representation. But animal sculpture in the round, judged by

MAGDALENIAN ENGRAVING OF A HERD OF REINDEER

Engraved on the wing bone of an eagle. From the *Grotte de la Mairie,* Dordogne. Scale, about 2/5. After Breuil.

two notable examples—the frieze of horses at Cap Blanc and the clay bisons of Tuc d'Audoubert, reached an extraordinary degree of perfection.

In the arts of painting and engraving, the game animals of the period, the ivory-bearing mammoth and those still dreaded enemies, the mountain lion and the bear, line the cavern walls in a brilliant succession of portraits. The earliest Magdalenian paintings were graphic outlines reminiscent of the work done by the Aurignacians. Then the artist learned to fill in the outlines with color. At times he engraved the finer details of his work or sketched the entire animal in



OUTLINE FIGURES OF THE FRESCOES ON THE CEILING OF THE CAVE OF ALTAMIRA, SPAIN

The length over all is about 46 feet. After Breuil.

incised lines before applying color. His first use of color was in the form of flat tints or dots. Later he discovered how to suggest the modeling of muscles by the use of varying shades of yellow, red, and brown; then it was that he evolved a polychrome fresco art of which the painted bisons of Altamira, Spain, form the most glowing examples.

The artist worked with crayons whittled from lumps of red or yellow ochre, or ground his colors and mixed them with water or animal oils. The pigments thus obtained were permanent. Preserved in the darkness of caverns, the frescoes are as brilliant as if they had been painted yesterday.

The Magdalenian painter used a more realistic technique than did the Aurignacian. He gave more attention to detail, to the careful drawing of hair, eyes, and feet of his animal subjects. But his purpose and inspiration were identical with those of the earlier artist —to catch the figure of the hoped-for game as it flashed across his retina and to project that swift photographic image in line or color on a distant cavern wall. The quality of his drawing, so accurate that one rarely finds traces of a corrected stroke, is one of the most remarkable features of cave art, particularly when one takes into account the material difficulties which confronted the cave artist—the feeble light, the uneven rock surface, often covered with a tangle of lines by previous artists, and the fact that he had often to crouch or lie upon his back as he worked in a low-roofed passage.

Primitive Hearths in the Pyrenees

The Magdalenians of France may have decorated the walls of rock shelters exposed to light and weather, as in Spain, where a favorable climate has preserved many curious rock paintings. But the examples of prehistoric art that line the walls of caves north of the Pyrenees are hidden deep in the earth, in final chambers or galleries often so narrow as to afford scant passage for a human body. Not that the Magdalenian ever inhabited those dark inner recesses. They were his sanctuaries, whither he crept to carve or paint on a white rock wall, or model in the damp clay of the cave floor, the image of a game animal or a totem. There too, in halls hung with glistening stalactites or faceted in rosy marble, he and his fellows celebrated the rites of their religion, ceremonies which have left their mysterious traces in the caverns of Tuc d'Audoubert, David, and Montespan. His religion seems to have been more complex than that of his Aurignacian ancestors. The cult of fecundity still persisted, but with it were mingled superstitions, taboos, and magic—a tangled fabric whose confusion increased as living conditions became more difficult.

The growing scarcity of food and fuel combined with the rigors of an arctic climate had severely tried the vigor of the hardy Cro-Magnons. As the ice sheet retreated towards the north, the reindeer disappeared from southern Europe and with it all the game animals of the cold tundras. The land ran with water. Heavy downpours swept the hillsides, flooding the streams already swollen by the melting glaciers. Many

POLYCHROME FRESCO OF REINDEER

Cave of Font-de-Gaume, Dordogne. After Capitan, Breuil and Peyrony by courtesy of the American Museum of Natural History.

POLYCHROME FRESCO OF CROUCHING BISON

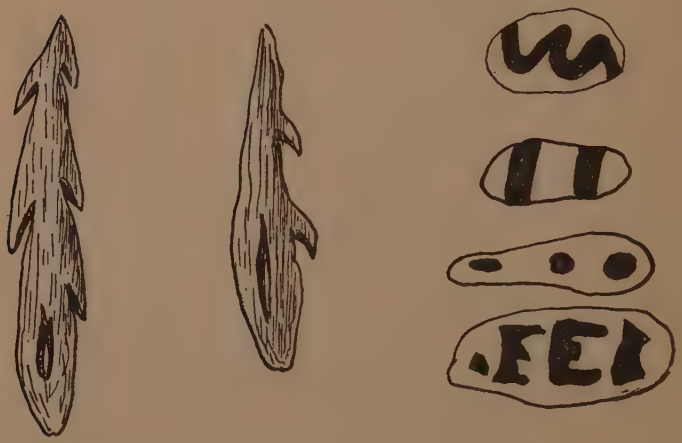
On the ceiling of the Cave of Altamira, Spain. After Cartailhac and Breuil by courtesy of the American Museum of Natural History.

of the caves and rock shelters became uninhabitable. In a wave of raw cold and all-pervading dampness the Old Stone Age drew to its close, and simultaneously the civilization of the Magdalenians vanished from the face of Europe. In the new era that was to come not a trace remained of their culture, their industry, or their art. It was as if the genius of their race—a vigorous, arctic spirit born of crisp, frosty air and sun—had been engulfed by the fog and rain of the post-glacial deluge, or had flitted away to the north with the reindeer, never to return.

The Old Stone Age, the Paleolithic Period, had ended, but the New Stone Age, the Neolithic Period, was not yet born. Between the two intervened an epoch of transition, so mysterious because so little known that for a long time modern scientists called it the "hiatus," as if with the end of Magdalenian culture all civilization had died out in the west. Then a French archeologist, Edouard Piette, while engaged in excavating the great cavern of the Mas d'Azil, laid bare a vast section of the life of the enigmatical period of transition. He uncovered traces of a civilization so different from that of the Magdalenians that scientists have been led to think that the men of the Mas d'Azil, or Azilians as they are now called, belonged to a race which pushed northward from the Mediterranean basin in advance of the other invading hordes that were to sweep over western Europe during the centuries of the New Stone Age.

Compared with that of the Magdalenians, Azilian

culture seems poor indeed. Of artistic impulse there is no trace beyond a few signs and geometrical patterns traced in colored ochre on pebbles from the river bed or occasionally on cave walls. The Azilian was no artist, and only a mediocre artisan. His flint and bone industry is remarkable for its poverty. His tools



AZILIAN BONE HARPOONS AND PAINTED PEBBLES

are for the most part merest chips, carelessly flaked and retouched. The only new characteristic is the presence of numerous pygmy flints, so diminutive that their use, aside from arming shafts of harpoons and fish-hooks, has not yet been determined. A harpoon of deer's horn, the only bone implement aside from occasional points or polishers, forms the most typical artifact of the period. Cut with less skill than its elegant

Magdalenian prototype, it is flat where the former is cylindrical, and the shaft, broad with a rounded base, is generally perforated.

The painted Azilian pebbles have received considerable attention from archeologists, certain of whom have tried to discover a similitude between the geometrical figures they bear and the most ancient of hieroglyphs. But no one as yet has been able to establish the fancied resemblance in any satisfactory fashion, and their purpose is still undetermined.

Azilian culture, characterized by flat harpoons and painted pebbles, has been traced north from the Pyrenees to Belgium, England, and the west coast of Scotland. No Azilian stations have been discovered in northern France, which is, however, the site of a contemporaneous industry, to which the name Tardenoisian is given, after the type station of Fère-en-Tardenois. This industry is marked by the presence of pygmy flints in great numbers. These miniature tools belonged, like the Azilian, to a race of fishermen; Tardenoisian sites are generally to be found on inlets, bays, and watercourses. They show wider distribution than the Azilian and have been found as far east as Russia, Syria, and even India. It is thought that the Azilian culture represents the more ancient form of a civilization which found its concluding phase in the Tardenoisian industry.

Rare examples have come down to us of the fishermen who lived during the period between the Old and the New Stone Age. Fragmentary human bones were

ing in vast surges from the mysterious lands of the East and South! As far back as history reaches, far into the dawn of prehistory, and still they come—races that die out, leaving no trace, races that cross and mingle—moving constantly north and westward, checked at last by the barrier of the sea!

Little peninsula of Europe! Was it only a hazard that has made the country of France a centering point for many races? That it should be its fertile lands in which a succession of human cultures have sunk their deepest roots and attained their finest flower? France, nursery of art, France, "cradle of civilization" . . . the words are not new. They ring with special poignancy to the student who for the first time bends above the relics of prehistoric peoples—races of Heidelberg, Neanderthal, and Cro-Magnon, our ancestors in Europe, the men of the Old Stone Age.

THE CAVE REGION OF ARIÈGE

CHAPTER III

THE EXPEDITION STARTS

THE Expedition stood in the middle of the basement of the *Bazar de l'Hôtel de Ville*. On the right, garden benches; on the left, lighthouse lamps, rakes, stoves, and cider mills round about and overhead. To penetrate the prehistoric past one needs not only scientific knowledge and imaginative enthusiasm; one needs tools. So here we were in the Paris center for "seconds" to serve every conceivable mechanical need. No museum could be more bewildering, no toy shop more enticing.

From an array of iron prongs, teeth, and spikes, we selected the pick and shovel for our workman, a crowbar, pokers (the classic archeological implement), and a trio of steel claws designed for grappling with garden weeds and known to French horticulturists as the "hand of death." All these fitted to handles, we then chose the sieves through which each shovelful of potentially precious earth must pass, the five-meter tape, the spirit-level, and finally—intriguing prophecy of cave adventures—fifty yards of stout rope.

"With all those tools, what do you expect to unearth?"

Primitive Hearths in the Pyrenees

It was our last night in Paris, and the friends who had come to dine challenged us.

"Other tools," we answered. "Flint knives, scrapers, and gravers, like those we have already found. And if, as we hope, there are other cultures buried below, tools of the late Paleolithic epochs with perhaps even carvings on ivory and bone."

But the anthropologist of the Expedition spoke positively. "I am going to dig up a skeleton."

Every one laughed. "You and your bones . . ."

She too laughed, but, "Just wait and see," she said.

* * *

It was very early in the July morning when we left the train at Cazères-sur-Garonne and mounted the front seat of the autobus marked "Ste. Croix de Volvestre." A top-heavy lumbering vehicle, it had been fitted to the chassis of a former American army truck considerably the worse for wear, a combination not too reassuring to prospective passengers. Yet the autobus line of Ste. Croix is an ancestral affair. "Castex," runs the name plate, "son-in-law of Peyrevidal"—the union of two families at either end of the valley who have carried the mountain mail ever since the days of postilion and post-chaise.

The road from Cazères crosses the Garonne and begins its rise and fall, rise and fall, towards the Pyrenees. In the early air the mountains stretched across our path, blue and thin, the Vallier barely discernible. Then, as we climbed, the rising foothills

covered them and bounded our world. Slender feathers of poplars by the stream, purple-tiled roofs, and walls of cream-colored plaster and stone; half-hidden in brambles, crumbling mills, relics of the days before the Mediterranean olive trade when the oil of the Pyrenean valleys was crushed from native walnuts.

AN ABANDONED NUT MILL AT STE. CROIX

On the hillsides, between close-planted fields of beans, potatoes, and corn, little girls watched grazing cattle, and across the hard white road coiffed old women drove flocks of young geese or steered an unruly pig. A lyric country, perfect "eighteenth-century" landscape, and in July, when our own countryside is parched and yellow, of unbelievable springtime green. The meadows and hillsides clipped to a velvet smoothness, descending in waves unbroken by hedge or wall, gave the impression of a great, richly maintained estate,

precious and private. And yet this opulent quality of the valley arises from an opposite cause—the thrift of the foothills. For the velvet meadows meant that one crop of hay had already been closely harvested, the second was growing, a third was to follow; the poplars' fantastically clipped heads made fodder for the cattle and litter for the stable; and the lovely little shepherdesses and picturesque old women—the children and the aged—represented the only two classes of the population unfitted for labor in the small, intensively cultivated fields.

The stream we followed was the Volp, the little river that five miles beyond Ste. Croix flows past the cave of Montardit, and five miles farther still, issues from the mouth of the famous Stone Age cavern of Tuc d'Audoubert. To our left rose a tower, then a flat façade pierced by twin bell windows—the convent of Ste. Croix, a ruin since the Revolution. Between rows of close-packed houses, past the church flanked by its crucifix and bead-wreathed war monuments, we drove into the dark center of the town.

Beyond the village a quarter of a mile of white road lay between us and our destination. In a hollow below the highway stood a cluster of ruined walls, former domain of the Seigneurs de la Catine. Before a rumbling mill two women were loading a donkey with bags of meal, and from the doorway of the high stone barn waddled a flock of gray geese. But the manor house stood hollow and cold—another relic of revolutionary zeal. Perhaps it was never a very agreeable

dwelling—damp walls close to the river and always the noise and business of the mill, but doubtless the Seigneurs found this no more annoying than the lords of a still inhabited château higher in the mountains who have built a roaring foundry beneath their ancestral eaves—pleasant, if noisy, symbol of prosperity and property. The two remaining farmhouses of the Catine still bear their curious name of the Shrew of Doubtful Morals. A few rods beyond the mill we came to a mounting lane bordered by apple trees and quince bushes. Down from the knoll above raced two joyous dogs, a golden-eared hunter and a diminutive brown dachshund.

"Block, Seppel, down!"

The Expedition had arrived.

The house which was to be its headquarters was the typical peasant cottage of the valley—of stone cemented only by earth, purple-tiled roof extending also over barn and poultry house, grapevine festooned above white-shuttered windows and the barred door with its eighteenth-century iron knocker. We found breakfast waiting in the kitchen whose details had not changed for hundreds of years. Huge, heavy-beamed, and dark to keep out the fierce Midi sun; milk bubbling on the charcoal-table tiled in blue and white; beside the chimney the door of the enormous oven which could house twenty six-pound loaves of bread; the curtain-hung chimney and the hearth and crane over which the Pyrenean housewife bends for so many daily hours that, the posture becoming a fixed habit,

one often finds her standing over a dishpan set upon the floor.

We drank our *café au lait* from yellow bowls and crunched toast spread with honey heavy with heather and linden blossoms. Moïse served us, Moïse from the highest farmhouse in the commune, with her small, exquisite foot and the voice that was best adapted to addressing cattle. The dogs sat at painful attention, Seppel ("Little Joseph" in the patois of his native Schwarzwald) and our great white Black whose name was not a poor American jest but a confusion of the French *blanc* with a stylish foreign word. For it is the fashion for the hunting dogs of the Midi to bear English names, the gentlemen being known as Stop, Black, and Rip, the ladies as Ida, Cora, and Diana, or the less classic Miss.

All gastronomical hope vanishing with our last crumb, the dogs set out to show us the state of the crops. In the acre field behind the house, corn, beans, and potatoes flourished in long rows, the staple crops of a country where winter comes early.

"But don't think that the corn is for us." The artist's wife—our paleontologist—stopped to examine a forming ear. "That's all for the farmer's pig. I have to steal whatever we eat, and even so it's spread far and wide that Americans eat pig food. Not," she added, "that the horror is of the same origin as it would be at home. Here you don't give any old thing to the pig. You raise corn and potatoes and cabbage for him and cook them every day into a nice soup. And he is often

OUR HOUSE AT LA CATINE

IN THE FOOTHILLS OF THE PYRENEES

Photograph by Max Bégouen.

the only member of the family who gets washed. I tell you this is a district where everything is done for the animals and nothing for the people."

Beyond the field the garden mounted—blackberry bushes soon to bend with richness, fig trees with hard little green promises, and climbing the pear trees a few ancient vines of Muscatel.

"Last summer wasn't enough to put the garden into shape," Paul remarked.

"This summer," his wife stated positively, "I'm going to have screens in every single window of this house. I may not succeed until the day we leave. All last year I was beaten by the combination of southern procrastination and the idea that nobody ever heard of screens anyway."

"They just naturally let the flies walk all over everything?" the anthropologist inquired.

"Not quite. They shut every window tight and live in the dark—and the damp."

Within a week the carpenter came and worked a day. A month later he came again. He made a beautiful screen door, through which the dogs erupted, and many excellent screens, enough, in fact, for every window in the house—except one.

* * *

We caught the seven o'clock autobus for Montardit. The road ran past the Boche Bridge, built by German war prisoners, and on for three miles to the first village, Mérigon. On its outskirts a cross lurched at a bac-

chanalian angle, an attitude peculiarly fitting. For here, one dark night, a peasant in a state of extreme inebriety, encountered the Lord of Hosts.

"And what," asked the highly incredulous priest, "did God look like?"

THE CROSS OF MÉRIGON

"Oh," described the visionary definitely, "He was dressed like a gentleman. He had on a good pair of shoes."

And with such conclusive evidence he raised the cross in the midst of a country of sabots and sandals to God in a Good Pair of Shoes.

Against a wooded hill stands the church of Mérigon, the double bell tower by the roadside, the graveyard sloping towards the Volp, with its great white Christ beneath the dolorous cypress trees. A huge

rock hidden in green rose beside the river, capped by almost buried blocks of gray stone, once the watch tower on the boundary between the province of Comminges and the bishopric of Couserans.

Beyond Mérigon the valley becomes a deep gorge between two cave-pierced cliffs of the Plantaurel. We crossed the Volp and five minutes later came upon the mountains and Montardit. The blue range of the Castillonnais formed a far-away barrier to our road, and above us from medieval church to Saracen gate stretched the town, along the ridge to which the Romans gave the name of *Mons Arditus*.

Again we climbed the steep, breath-taking path, with its bushes and briers crowded against the limestone cliff, choking the cave openings. We fought back vines and brambles and once more stood on the violet-shadowed threshold of the *Tuto Bioulet*o. Water no longer dripped from the hanging moss of the vault; the April dampness had largely disappeared. Once the entrance had been cleared to let in the July light and air we should have an ideal workroom.

We began an eager scratching in the "viper's corner," turning over the damp, stony earth with our fingers, feeling for the jagged edge of bone and the smooth slide of flint. Just as in the spring, the soil was rich in small flint chips and in the remains of countless carnivorous feasts.

"Of course this is wasting time," we assured each other. "All of this earth will have to be sifted later."

But for several hours our fingers continued the ac-

tivity they had awaited during the past three months. It was hunger in the end that drove us from the cave. On the meadow that had been a lake when men inhabited the Violet Hole, we lunched on fish from the Volp and cherries from a neighboring orchard; and then began the serious business of the day, the search for a workman.

Along the road beneath the ridge sits official Montardit—the post office, the inn, and the schoolhouse. At the window of his dark little house we saw Jacquelard, the village cobbler, whose protuberant forehead and pale, lightly wrinkled face always gave the impression of an anxious child. Catching sight of us, he came to the doorway, his joy touched by the mingling of pride and servility characteristic of the mountain peasant. Behind him a plump young man whose fierce black moustache was belied by his pink and stammering embarrassment, rose to shake hands and then sat down again, eyes glued to the shoe he was repairing. A little girl in a black pinafore crept out of the shadows of the fireplace to proffer her hand and her dimples.

"Simone is getting to be a big girl."

"Oh, yes, she is growing," her father nodded. "And Jean-Marie has finished his military service and is working with me." He indicated his blushing assistant, who according to local custom, as eldest son was to inherit his father's trade. "But Augustin—"

A woman came down the stairs, dark eyes alive under her white kerchief, worn from a life of toil but with the light, erect bearing of the *paysanne* used to

THE SARACEN GATE AT MONTARDIT

carrying burdens on her head. With gracious simplicity she excused her tardy appearance. She had been lying down. No, she was not ill, but she had just finished the washing, and it was a hot day. We had a vivid impression of the weight of homespun sheets wrung out on the river bank.

"My husband was telling Monsieur and the ladies about our second son, Augustin? He is in St. Girons. He is a waiter in a café." Pride gleamed in the eyes of the father and mother and little sister. Jean-Marie's face became apoplectic. St. Girons—six thousand inhabitants and ten miles away! "Augustin is only seventeen. He is smart."

We had an immediate intuition that Augustin was a most unpleasant child.

"Augustin," his mother continued, "thinks Jean-Marie might find a place for a month or two while the big autocars are coming in every few days. But I don't know. Jean-Marie, he is a good son, but—"

We explained our presence in Montardit. Jacquelard laid down his work to listen. Yes, yes, he remembered when Monsieur Paul was a youngster and had dug in all the caves with Monsieur l'Abbé. He himself had been one of the men who had sifted and removed the ashes from the *Tuto Biouleto* twenty years before. "And you have found things in the cave? Bones and pottery and flint tools? You are going to hunt all summer?"

"These ladies, too?" Madame Jacquelard exclaimed. "But you will find it hard, dirty, and tiring!"

We laughed and agreed, thinking how ironical might have been her sincere horror. There was in her respect for that iron tradition which we did not acknowledge, that tradition which separated her from a lady who does not work with her hands, a certain proud patience and an anxiety that all remain unchanged; for otherwise it would surely be the end of the world.

"Do you think," we inquired, "that at this season, when every one is in the fields from four in the morning to ten at night, we can find a workman for the cave?"

Jacquelard thought it might be managed. The approach of the autobus far up the still road precipitated our farewells. When the chauffeur returned to Ste. Croix the following evening, he brought the news that we had a workman at Montardit—Jean-Marie, son of Jacquelard.

"They need the money," Paul commented. "In the village where every one else is prosperous, they have too little land to feed them, and while one child is the rule throughout this mountain country, the Jacquelards have four. And in Montardit there is scarcely work enough for two cobblers."

* * *

It was a purple and stammering but determined Jean-Marie who took our potato sack of tools out of the autobus next morning. Added to his natural timidity were the undoubted jeers of Montardit for an able-bodied young man who, at a time when every one

was needed in the fields, was going to spend a whole summer breaking rocks. And for only eight hours a day, too. No wonder Jean-Marie felt a little ashamed of his sinecure.

We had expected to start our excavation of the cave in the classic manner—to begin at the entrance with a trench at right angles to the opening, on the sides of which, as it descended, we could see at once the stratification of the cave floor; but as a few hours of digging brought us to solid rock, we adopted the slower, blinder method of excavating layer by layer at the back of the cave. The overturning of the upper stratum of earth by the peasants and the water that had entered during a succession of winters had left the surface markedly uneven. Our first task was to level the mixed stratum.

Seated on either side of the shallow trench by the entrance, we waited for the first sieves of earth, while Paul took up his station with Jean-Marie to instruct and observe. The corner where we had chosen to begin was filled with stones of all sizes in a bed of damp black soil. From the surface Jean-Marie filled the sieves with mud, snails, and stones, sifting them as much as the dampness of the earth allowed.

At first glance the contents of our sieves seemed best described by the peasants' term for archeology, "gathering stones." Stones of all shapes (particularly painful shapes when their muddy coating was pierced), stones weathered off from the cave rock, stones brought in by water, lying among myriads of crushed snail shells which pricked and cut the fingers. And yet this

seemingly insignificant mass was to offer us a complete cross section of human existence in a far-off age. For here and there showed streaks and lumps of crumbly black charcoal, surest evidence of man's occupation, his wood fire. Scattered throughout, slivers of bone —shafts split open to reach the nourishing marrow, an occasional morsel burned and polished blue and black by the flame—these were the remains of a hunter's meal. Animal teeth, bits of skull and horn, the rejected portions, completed the primitive refuse heap. The very stones added their testimony. Some were cracked and split by the fire in which they may have been heated to drop into water to boil the pot, after the manner in which many an Indian cooked not long ago. Other stones bore scars at either end as if they had been used as hammer or chisel. Pieces of brick appeared together with fragments of pottery in black and red, evidence of Gallo-Roman occupation. Then, after a few sieves, these disappeared, giving way to a coarse gray ware, heavy and poorly fired—pottery at its European origin, the Neolithic Period.

"It seems strangely ironical," we philosophized, rolling an empty sieve towards Jean-Marie, "that future scientists may know us only by the fragments of plates, cups, and saucers that fall from the hands of our Moïse!"

"Pottery is queer," the subject was continued. "It is the easiest thing in the world to break and the hardest to destroy. Think how it has dated whole civilizations—from the Bronze Age cities of Crete to the

pueblo towns of our own Southwest, all explained on the basis of changing types of potsherds. And here in Montardit we shall never be certain that we are working in a true Paleolithic level until the pottery disappears. Its absence will be infinitely more convincing than the presence of these tiny flint chips." We bent over the little pile of muddy flints, whether Azilian knife blades or flakes from Neolithic nuclei could not yet be determined.

Paul joined the two workers by the entrance.

"What have you found?"

"Pottery, flint chips, one retouched knife blade, and innumerable bones—deer and wild boar for the most part, judging by the articulations. The rest we can wash for traces of tooth marks or flint scratches."

"Many teeth?"

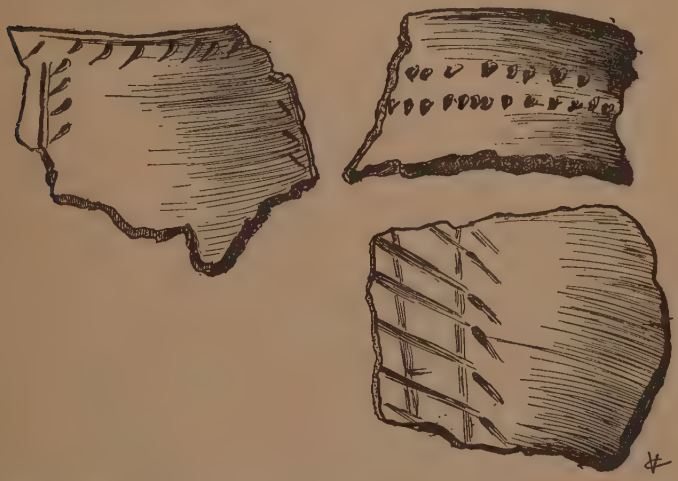
"The upper molar of a horse, two rodents' jaws, and heaps of wild boar, mostly milk teeth." The osteologist of the Expedition pointed out a characteristic three-lobed premolar fixed in the lower jaw of a young pig.

"Here is my contribution." Paul held out a tiny rectangular flint with one corner notched to form a graving tool and a curving deer horn which had manifestly been severed with a flint knife blade.

We dragged the novitiate ache of our arms and backs and eyes down to the road. Jean-Marie's mother was waiting for us with a pan of spring water and a homespun towel. While we washed in the dooryard, all Montardit gathered about to see the results of the first day's digging. "Nothing" seemed to be the gen-

eral verdict, delivered with mingled surprise and satisfaction, for, as the blacksmith remarked not without a twinkle in his eye, "We thought you were hunting for treasure."

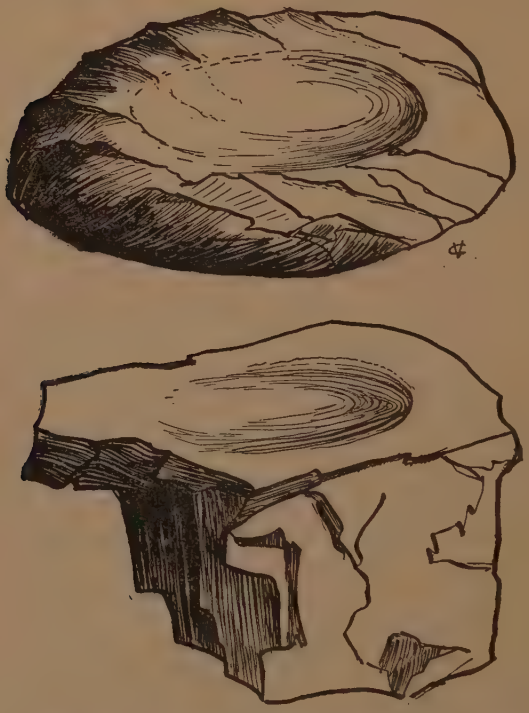
Through the next few days we dug and sifted and scraped. The results were much as on the first day—



FRAGMENTS OF NEOLITHIC POTTERY FROM THE VIOLET HOLE

scraps of Neolithic pottery, sometimes incised with crude design of punctured points and occasionally the classic laurel-leaf pattern; teeth and split bones of cattle, deer, and boar, jaws of wolf and wildcat; masses of flint chips and a very few tools. We found two large stones with circular depressions worn on their flat upper surfaces; these were New Stone Age hand mills. Among the bulkier stones that Jean-Marie re-

moved when sifting appeared long *galets*, water-worn stones brought from the river. Some bore traces of



NEOLITHIC STONE MORTAR AND MILL FROM THE VIOLET HOLE

Scale, 1/3.

hammering, but the purpose of most of them was obscure.

As the pit descended, our hopes rose high; instead of dropping vertically it sloped away towards a hole

in the right wall, an intriguing crevice below a red band of limestone. Was this an opening into another of the row of rock shelters, the beginning of a gallery which might descend to the river? In any case we were convinced that the true bottom of the cave lay far below.

At the end of the week we made a discovery which aroused the recently allayed suspicions of Montardit concerning the avaricious inspiration of our toil. Half a yard down on the rear wall of the cave we came upon a small recess in the rock, and fitting quietly into the niche sat a little coffer. Jean-Marie drew back his hand with an inarticulate splutter. The treasure! And so soon! No one will ever know what thoughts passed through his head, but the question whether his share of the find would compensate for the loss of a summer's wages might well have been present.

We lifted out the "treasure" with care, though there was nothing fragile about the sturdy little pewter casket. It was oblong, with a peaked lid unhinged by time and dampness, and within was a pewter plate pierced by three holes, the central covered. An old inkwell lost or hidden by children was our first pessimistic diagnosis, but closer scrutiny revealed that the lid bore a tiny knob bent sidewise, and straightening it gently we saw that it was in the form of a cross.

"It may have belonged to the church," one of us suggested. "Hidden here during the Wars of Religion."

"Or the Revolution. Look at the form." Paul held it off to study the outline. "The lines are just like the

Louis XVI wooden chests that you can still pick up here in the country, and it's even got a mansard roof."

"Perhaps the compartment held the sacrament for the dying," we thought.

In the course of the day the postman and the blacksmith came to call and were much moved by our find, to the scorn of the enlightened Jean-Marie.

That evening at supper, regarding the box on the shelf between a Neolithic nucleus and a porcine vertebra, we conjured up a touching picture of an old ascetic priest hiding within the Violet Hole the sacred casket that he had borne out into many a stormy mountain night on the eve of the more terrible tempest of the Revolution.

Next morning on the path to the cave, we met a plump figure in a greasy cassock, a round, heavy face under an enormous sun hat.

"I hear you have found a box belonging to the church," announced the *curé* of Montardit.

"We dug up a small pewter chest which we think perhaps—" we began.

"Yes, yes," he broke in impatiently. "They have told me all about it. It is made of gold and—"

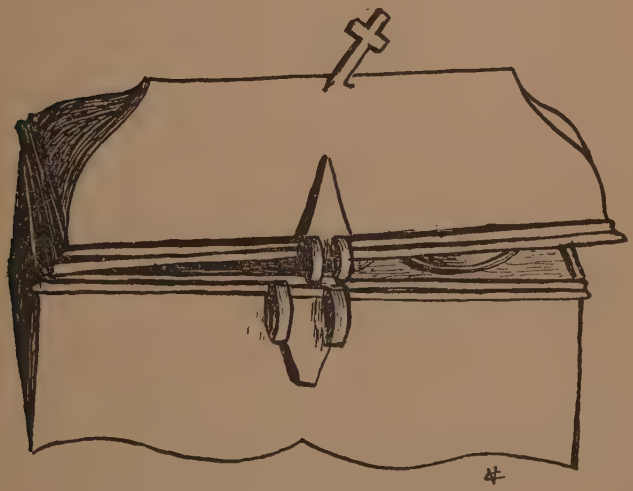
"It is made of pewter," we corrected.

"They have told me," the priest went on, "all about it. From its form I am certain that it was intended to carry the holy oils."

We told him our theories concerning its probable date and offered to bring it back to Montardit to show him.

"Vous ferez bien, Monsieur," he replied shortly and departed with precipitate ungraciousness.

During the day other rumors reached us—vague hints of treasure, silver ingots, chests of gold *louis,* and most of Montardit climbed the steep trail to the



THE COFFER OF THE VIOLET HOLE

Violet Hole. One or two of them picked up an idle tool to "help" Jean-Marie, and eyes were riveted to each stone or lump of earth we flung from our sieves. It was not a brilliant day from an archeological aspect; for hunters of "treasure" it was hopeless. After an hour or two even the most imaginative good-humoredly retired.

But the priest was not so easily satisfied. He con-

tinued, so Jean-Marie told us, to mutter darkly about sacred things in the hands of *"profanes."* In a country where religion, in comparison with old primitive superstition, is still a frail new thing, and in a community that regretted the liberal Abbé of Paul's boyhood, his words held little significance. Nevertheless we decided to give the casket to the church of Montardit.

"It would have been a pleasant keepsake for us, but if it really means so much to Monsieur le Curé, he shall have it," we agreed.

We left the box with Jean-Marie to be delivered at the presbytery, and the following evening, as the anthropologist ran down the path behind the others on her way to catch the autobus, she almost overturned a sacred figure.

"Mademoiselle," he called after her retreating back, "I see you have brought me back *my* box!"

* * *

Days went by at Montardit. We sifted during the long morning and the short afternoon. When midday rang out from the church tower above us, we picnicked by the Volp or, building our fire in the entrance of the cave, began to pile up a new culture layer for future archeologists. The villagers still came to watch us prick our hands on the snail shells, to admire the pottery and animal teeth, to regard sceptically our minute gravers and knives and then to cut their fingers on the edges. The blacksmith was a constant visitor. We liked his quiet, intelligent sympathy with our work;

we also liked his loyal little dog who existed only for his master and took no personal interest in our holes and bones.

The laborious method of passing each shovelful of earth through a sieve began to add an ever-increasing number of justifications. There was a tiny sea shell

FIRST FINDS IN THE VIOLET HOLE

Bone polisher, pierced sea shell, Neolithic flint arrow head, Azilian bone harpoon. Actual size.

pierced for suspension, a lost bead from a necklace whose presence in a cave of the Pyrenees gives an idea of the scope of Stone Age commerce and the desire for adornment that inspired it. The other microscopic find, a flint arrowhead, was so tiny that its purpose seemed purely ceremonial, yet it was retouched with perfect regularity along both borders.

Such flint-working belongs with pottery to the New Stone Age. We were still finding Neolithic industry side by side with remains possibly Paleolithic, but as we reached the end of the earth that the peasants had overturned, the pottery disappeared. Two more objects gave us high hopes as to the possible contents of the nearly reached virgin soil—a fragment of a bone tool (a rounded end broken from a polisher) and the lower half of a small human arm bone. Although we dug carefully for hours about the spot where this last was found, we could discover no further human trace, nothing but the usual animal refuse.

"Cheer up!" They comforted the anthropologist who sat in the middle of the hole, regarding the humerus with a tragic, muddy face. "He was probably only Gallo-Roman or Merovingian."

"She might have been Neolithic," the anthropologist mourned.

"And only six or seven hundred Neolithic skeletons have already been found in France," Paul reminded her.

But if human remains were scarce, those of animals collected in ever-increasing numbers. Their cleansing filled long hours of each Sunday. Crouched on the rocky rim of the Volp, we dipped and scrubbed and rinsed. One evening as we knelt in the midst of drying vertebræ and jaws, the bushes parted above us and two fishermen approached. They gave one look at the fantastic washerwomen by the water's edge. There was a flash of scarlet sashes, a clatter of sabots,

as they took to their heels, convinced that they had encountered *los fadettos,* the legendary sorceresses, who sit by the river washing shrouds.

For we were in a country where men still remember the old gods. The new gods whom the Romans had brought to live in the towered churches by the cypresses they might forget, but the primitive spirits caught between hill and hill, these were an undeniable part of their being. Many strangers—armies, settlers, traders—had done their belligerent or peaceful and more insidious best to change the people of the foothills. For although no one comes here now, once everyone came. Roman, Visigoth, Saracen, their traces lie lightly on the countryside. The vineyards of Ariège, once the imperial province of Novempopulania, still grow over rows of dwarfed trees in the Roman manner, and the highroads leading to Spain were laid by the colonial legions. The passing of the Visigoths has left no race of fair-haired men, but our dark-like peasant neighbor at Ste. Croix bears the name of Alaric. The Saracens too added an exotic touch to the local nomenclature. The family name most general in Ste. Croix is Soux, or the diminutive, Souquet, descended directly from the Algerian Jewish merchants who followed the Arabian warriors across the Pyrenees. But because the Saracens were not merely soldiers, we find other proofs of their passing. Agriculturists as well, they irrigated the high valleys and introduced exotic plants. Not only has Montardit her crumbling Saracen gate, but around the walls

flourish fields of rosy-flowered *sarrasin,* the traditional name for the buckwheat first brought into France by the Mohammedans.

Yet all these suggestions of mingling civilizations seem to have led to no great interunion of blood. On the white road past La Catine, slim brown youths point their ox goads with strong fine hands, and women, dark heads beneath baskets and earthen jars, walk erect on exquisitely small sandaled feet. It is the short, finely constructed race of southern Europe, the Mediterranean Race of the anthropologist, modified here and there perhaps by passing strains but essentially the descendants of the old Paleolithic peoples.

* * *

One clear hot morning we sat at work in the entrance of the *Tuto Bioudeto.* Across the valley beyond the dark foothills the range of the Castillonnais faded out in powdery yellow haze. Men's voices jesting rose and wound beneath us. At a turn in the trail we caught sight of the speakers—Paul accompanied by a tall priest whom we recognized as the former Abbé of Montardit, the discoverer of the Violet Hole. He came swinging up the path with a brisk step, a big man with a round Roman head and a distinctly Latin twinkle in his blue eyes.

"Morning, children," he called, and laughed loud at the sound of his self-taught English.

To our accounts of digging he listened with live interest and lively comment, examined the morning's

harvest of stag horns and chips of flint and the damp snail-thronged earth.

"So this is the mysterious Azilian age. I never suspected there were culture layers here below the Neolithic." His eyes followed the green line of the original surface. "You and the peasants have lowered the level considerably since I gave this young man his first lesson in archeology."

"Is it true that there was once a shrine here in the cave?"

"Ah, that is quite a story." The Abbé's eyes twinkled. "Modern history, *vous entendez*. About fifteen years ago a Jesuit father held a mission in the village. Montardit, alas, has never been devout, you know, and the good father grew discouraged. One day someone mentioned the cave. 'A cave!' exclaimed the father. 'We will set up a statue of the Virgin there and found a center of pilgrimage.' All Montardit turned out for the ceremony. We carried the statue here in procession and set it up yonder in the little niche where you see a daub of plaster. And the good father hoped for an increased attendance at mass the following Sunday. But no, the usual handful."

"And the Virgin?" we inquired.

"My friends," the Abbé indicated an opening in the vault above us, "in that hole up there it has long been the unfortunate custom of the small boys of Montardit to throw stones."

* * *

We were sifting the next morning.

"If this is really the Azilian period," Paul knocked his empty sieve against the rock, "we ought to be finding a harpoon. Every time I feel a small twig—What's the matter with you?"

For his companion was staring at him with fixed eyes, her fingers frozen around a dirt-covered object.

"What's the matter?" Paul repeated. "You haven't got one in your hand, have you?"

"Yes," she said. "I have!"

A bit of bone, perhaps an inch long, a shaft with alternating rows of barbs terminating in a delicate point—it was a fragment but a very precious fragment. Unlike the rounded harpoon of the Magdalenian period, it lay flat upon the palm, and this flatness, together with the characteristic arrangement of the barbs, made plain the epoch of its origin. Close cousin of the coarser harpoons that Piette had found with the painted pebbles in the Mas d'Azil, it gave us our first clear indication that we were excavating an Azilian layer. Within the stratum of virgin soil on top of which the harpoon lay, we would find the remnants of that darkest of all dark ages, when the great Paleolithic art was extinguished, and before the steady light of material progress that Neolithic man brought with his herds and his seeds had begun to shine. Period of transition, where beginnings and endings blend, what men had left their worn out and forgotten tools in this mountain valley? What should we find in the Violet Hole?

CHAPTER IV

THE BISONS OF MONTESQUIEU-AVANTÈS

BEFORE we could add a tangible answer to the questions of the Violet Hole, we were transported into the midst of quite another atmosphere. The *Institut International d'Anthropologie* was holding an "Archeological Week" at Toulouse, and to this gathering of prehistorians of western Europe we brought the hope of one more rare Azilian cave.

Toulouse, in the rich plain that stretches away to the prehistoric strongholds of the Pyrenees, was an ideal spot for such a congress, more especially since here had lived and worked one of the pioneer explorers and prehistorians of France, the venerable Professor Cartailhac. Throughout the week, in the accents of Spain, Belgium, Switzerland, as well as of his native France, the men whom he had taught, encouraged, and inspired spoke of him constantly, not only in the formal tribute of the opening session, but in warm, casual words of conversation which painted an affectionate portrait of this scholar of the south who until the day of his death had labored for the understanding of the prehistory of his great region.

The personal charms of Toulouse we had few mo-

ments to appreciate. There was no time to linger in the early morning among the peaches and figs of the market place; at noon we did not stroll down to the Garonne through the still streets of the old quarter of the Daurade, with sun and shadow checkering the carving of fifteenth-century façades and glimpses of courtyards gray and green. Three times a day we hurried down avenues of rosy brick and palms to the Allées St. Michel where the congress held its sessions. And at evening, when all Toulouse sits before its wide blue and white cafés, the member of the congress attended illustrated lectures.

After three days individualities began to emerge. On the last afternoon, when each man presented and explained his most recent finds, we felt a personal interest in his explorations—from the excavator of North African sites to the little student of the University of Toulouse who had lowered himself by a rope for eighty feet into the deep cavern of Durban and had brought up half a dozen skulls of the great cave bear. That night there was a dinner gay with the famous food and wine of Toulouse, and next morning thirty of us left on an early train for Ariège.

For three days our pilgrimage through the prehistoric caves of the region continued. Sometimes the shrine proved to be merely what a bewildered Magdalenian or Aurignacian would have called by his coarse equivalent for refuse heap; again it was a cave-cathedral decorated by his adept hand and consecrated by his prayer of need. We were to know all of these

FOIX

later when our Expedition of three devoted many days to penetrating the mysteries of the Ariège caverns; but at the time, crowding into narrow corridors in an unwieldy mass of enthusiasts augmented by occasional tourists, we gathered mainly an idea of what later to come back and see. That alone was worth the journey.

Morning at Foix was a delight. Across the river that cuts the town, a mountain torrent so swift that it has kept its cold clarity even in the midst of crowding habitations, above the seventeenth-century silhouette of the Prefecture rose sudden and gray the castle-crowned rock of the Counts of Foix. Three masses, three heights, the château towers on their precipitous eminence overbalanced the huddling town. In the square below, girls were carrying milk in high green and yellow pots, and old women gossiped among eggs, hens, and pigs, for it was market day. By half past eight we had gathered in the little Museum. Of the cave riches of Ariège it contains many precious examples, so poorly arranged, however, as to be quite unintelligible to the average layman. Flint tools and implements of bone made up a formless jumble, arrayed not by epoch, station, or type, but by size. We admired a mounted skeleton of a cave bear and examined his portrait engraved on a smooth schist pebble from the cave at Massat, one of the finest examples of Magdalenian art found in the Pyrenees. Then, leaving our more conscientious companions, we sought the château and the sun.

The Bisons of Montesquieu-Avantès

A rapidly ascending path of grass-grown cobbles led through the gate with its nail-studded doors, past the porter's lodge, to the summit of the rock. Behind us stood three strong towers, their outer defense walls crumbling and falling away in a tangle of brambles and eglantine, the ancient fortress of the Counts of Foix, dark emblem of the days when the Wars of Religion raged up and down the valley of the Ariège and the cave homes of the Paleolithic peoples became the last refuge for the Protestant Albigenses. Here in the fourteenth century shone the Comte Gaston Phœbus, renowned for his opportunist politics, his treatise on hunting, and his yellow hair. To-day all this is the dusty delight of antiquarians and romantic lady visitors, but every peasant of the mountain valleys knows two rare works which tradition ascribes to this most famous of the Counts of Foix, a love song and a dog.

For Gaston Phœbus set forth his ideas of hunting not only on paper, but in his finely bred race of great white pointers, the *braque d'Ariège,* whose descendants, pure white with enormous heads and pendent chops, one still sees in the dark streets of Foix.

And the song—

Aquelos mountagnos qué tan aoutoi sount
M'empatchon de bese
Maïs amous oun sount

sings the little shepherdess on the hill behind La Catine. The air simple, at once pathetic and aloof,

floats down to us in the late summer twilight. "These mountains, so high," says the rich old patois, remarkably near to the Latin, "forbid me to see where my love may be." Thus Gaston Phœbus, facing the Pyrenees that rose between him and Agnes of Navarre.

From his terrace where he may—or may not—have exercised his dogs and raised his voice in song, we looked down on Foix, over the huddled tile roofs, the centuries-old color and noise of the market place, to the river, the line of cafés on the farther bank, and, abrupt, the valley wall. Close at our left a hill higher than the castle rock bore tier after tier of vineyards, stone walls defining rectangles of green gold.

"Think of what that sort of terraced agriculture means." One of the women spoke. "When the snow melts a good part of that earth is swept down the hillside; it must be carried back again, basket by basket, on the heads of the peasants, a task usually of the women."

Before our eyes flashed a vision of tractors and the miles-long farms of our flat rich West. "The courage and the patience! To us it's unbelievable."

The first speaker smiled. "This is an old country," she said.

To the right the valley narrowed and darkened to the mountains, mountains which had housed man for infinite thousands of years before there was Foix.

"Come on." The anthropologist started down the

path. "We can't waste any more time on Gaston Phœbus. He's too ridiculously young."

* * *

"Only agile persons," read the italics of the official program of the *Semaine Archœologique de Toulouse,* "should enroll for the visit to the cave of Tuc d'Audoubert; for the passage is difficult, if not dangerous, and it is necessary at times to crawl through narrow corridors full of mud. Visitors are requested to wear a *combinaison* [mechanic's overalls] and clothes they are not afraid of spoiling."

We sat on the bank of the Volp at Montesquieu-Avantès, seven forms whose agility was somewhat masked by the bulky outline of the clothes we were not afraid to spoil, ready to embark on our brief black voyage into the cavern of Tuc d'Audoubert. By the side of the stream the oldest son of the owner gave a last inspection to the boat, a flimsy skiff of boards and pitch hastily constructed to replace the customary bark, destroyed during the spring floods.

Overhung and half hidden by the trees of each bank and the ridge above (the *tuc* or hill which gave its patois name to the cave), the entrance was lost in shadow. The sluggish stream that flowed from its mouth was the Volp of our own valley, for we had made almost a complete circle and were now only five miles from the Violet Hole.

As we waited we had ample leisure to examine the costumes of our colleagues. The bearded Belgian wore

an ancient khaki hunting suit, the Catalan professor was colorful in gray trousers and a pale pink shirt, while the stiff newness of our own *combinaisons* contrasted sharply with the earth-stained garments of the excavator from Algeria. As each man adjusted his acetylene lamp, there rose an irritating odor, henceforth always to be associated in our minds with cave adventuring, the sweet choke of water on calcium carbide. The sting in our nostrils added to our already present excitement. For the narrow, mounting corridors of the Tuc d'Audoubert lead to one of the glories of Paleolithic art, the sculptured bisons. In Toulouse we had been shown their model in the *Musée d'Histoire Naturelle* and had heard Count Bégouen, the owner of the cave, tell the story of their discovery.

In the summer of 1912 he and his three young sons, while exploring the subterranean course of the Volp, penetrated the first of the series of galleries that form the cavern. On the rock walls near the entrance they found several animal engravings of the Upper (later) Paleolithic Period.

A few months afterwards the oldest son together with a younger brother and François the valet climbed to an upper gallery to sketch traces of engravings. While one of the three sketched, the others set to work to break through the stalactites that closed the end of the gallery. After the removal of several pillars they were able to see that the corridor continued on the other side. Squeezing with difficulty through the narrow passage they had made, the three crawled for rods

through a steep corridor until they reached the final chamber of the cavern.

That night when the father returned to Montesquieu after a day in Toulouse, he was met by three excited boys who babbled an incoherent mixture of "Cave—Bisons—Come now!" So insistent was the last that, though night had fallen, the Count followed the three young explorers to the Tuc. Again the final chamber was reached, and for the second time since Time had laid its stony seal on the entrance, human eyes gazed on the shrine of the bisons.

Several days later, Professor Cartailhac, sped to the cave by the call of the telegram, "The Magdalenians modeled clay," turned from this first and perfect proof and with tears in his eyes said to the discoverer, "You have given me the greatest moment of my archeological career!"

And now the moment was to be ours. The boat was ready, and the first group embarked. The mouth of the cave sucked them in—a moment of gray, a moment of black, then a point of yellow, the lamp of one of the brothers who had preceded the party. Surrounded by hard blackness, standing on oozing blackness, they awaited the second boatload. The young proprietor of the cave picked up his lantern.

"My brother will bring the others," he said. "We can show the Tuc only to very small groups at a time because there are so many things that could easily be trampled underfoot by visitors who did not know every inch of the cave."

Our first steps were through water, ankle-deep over clay. When we left the water we continued over a moist, unstable floor between narrow walls of yellow limestone.

"All through the winter and after any big storm the Volp fills the entire length of this gallery." Our guide's lamp indicated the water-marked walls. "The cave is still being made."

A hundred yards farther on we climbed an abrupt little cliff and into the palace of the *märchen* gnomes. Cold, gleaming columns rising to the black vault, ivory curtains dropping transparent denticulated folds, vague frozen flowers, all with a curious sense of hollowness suggestive of the fluted decoration of a wedding cake.

It was within these two great chambers that we saw our first Paleolithic engravings. At first our eyes distinguished only purposeless lines confused with rock fissures. Then, sharp and definite, a horse stood out on the pale wall—a sturdy little Celtic horse, upstanding mane, ears erect, muzzle thrust forward, and deeply incised in his flank, a dart. For here Magdalenian man had graved with his flint burin a game animal and, artist, magician, hunter, had marked it with his arrow. Of all the food animals that Paleolithic man hunted over western France, his favorite, if one can judge from the frequency of its representations painted and incised on walls and engraved on bone and ivory, was this stocky wild horse whose bones, charred and split, litter so many ancient hearths.

On nearby walls our guide showed us other engrav-

ings—another horse, a bison, and the head of a reindeer with giant antlers curving up towards the vault.

MURAL ENGRAVING OF REINDEER WITH CLAVIFORM SIGN, TUC D'AUDOUBERT

Between ear and eye cut a club-shaped figure, the mysterious claviform sign. On both sides of the Pyrenees this strange bludgeon appears on cavern walls.

At Altamira, Pindal, and La Pasiega in Spain, claviform signs are mingled with bison and reindeer often bearing the vertical slash of knife wounds; in Ariège, the caves of Niaux and the *Trois Frères,* the latter adjacent to the Tuc, contain these crude symbols in color but not directly associated with animal representations. No actual clubs of this form have been found in Paleolithic deposits, but their absence has this highly possible explanation: they were made of perishable material, wood. If the claviform is a club, its presence on the reindeer's head is obvious. Like the dart beneath the horse's shoulder, it is a weapon to strike him down in the chase.

Here and there on the walls we saw formless spots of red, remnants of painted signs or figures swept away by time and water. In the corner of the second chamber of stalactites a chimney rose, forty feet sheer of rock to which an iron ladder had been clamped.

"When you first came here," the Belgian addressed the tall young man seated at the top waiting for our cautious ascent, "the climb was not so easy."

"No, but plenty of others had scaled the rock before us. On the vault over your heads there are several bisons crudely engraved. Like these," he indicated the walls of the cramped corridor which we now entered. "You will notice the head of a hind, and those two strange crouching animals, probably grotesques. All the engravings on this level are much older than those below."

Two other drawings, a stallion and a bison, or-

namented the walls of a small chamber into which the corridor now led.

"This is the spot that we once thought the end of the gallery."

"Ah, so this is the famous *Chatière* [cathole]."

Our guide moved slightly to one side. Just before his feet there was a gap between the clay floor and the rock wall. "We must go on," he said, "for I hear my brother coming with the others. Look out for my feet."

Down went his long length. The rock sat upon his shoulders, but with one clean shove of his arms, lantern and all, he slipped through the "cathole" with the ease of old habit. Twenty-two inches wide, nine inches high, it was a close fit, and though the clay was smooth, the stone above was not.

Once in the low corridor beyond, we crouched on our heels and watched our colleagues arrive. A few laughing groans and they appeared—the man from Algeria, the Spaniard, the Belgian, veritable cave gnomes in khaki and Basque caps, advancing on all fours like a line of grotesque mammoths engraved on Magdalenian bone.

As we proceeded, our heads almost touched a curious interlacing of lines which appeared to have been made with a toothed implement, very like the tangled curves that have been discovered in the caves of Gargas and Altamira. The character of the limestone walls had changed; the soft yellowish formation being succeeded by coarse gray rock. We passed through a series of

small chambers hung with stalactites where the drip, drip, of water indicated that others were still in process of formation.

We left the sound, all sound.

"Follow me, step by step," our leader commanded, "for we have left everything just as we found it, and if you do not walk with the greatest care, you may unintentionally step upon a bone or a footprint."

A hush fell upon us. Everything untouched since that century farther than thought when the silent curtain of stone had sealed the chamber. Our path wandered among single bones of the reindeer caught in the stalagmite, past walls marked by the merciless claws of the cave bear—in the clay floor lay entire prints of his giant paw. Here and there were bones showing where animals had lain down to die; we passed the shattered skeleton of a reindeer that had fallen through a pit from the hillside above.

"The man of the Quaternary era saw them all," our guide stopped beside a little heap of bones, "and removed the one thing he wanted—the canine teeth which he pierced for ornaments. The other bones are undisturbed, but from every jaw the canines are gone. We found this little bear in place, but the jaw, you will notice, lies beyond, where someone took out the teeth and then threw it aside."

Bending over the jawbone, we saw beneath a thin coating of stalagmite the round depressions left by two human knees where their owner had knelt while extracting the precious canines.

"We found a pierced tooth," our guide went on, "on the clay floor of the gallery, and a few flint tools—a Magdalenian scraper, a combined scraper and graver, and several used chips, but in the entire cave that was all. The Tuc was probably a shrine, never a habitation, and these things must have been lost in passing."

In the clay at our feet we saw the imprints of the hands that had let fall the tools they had fashioned, human finger tips isolated and in groups; imprints of feet also, slender and small, the great toe slightly broadened as in men who walk habitually barefoot, and in their midst the footprint of a child.

We passed on silent. The impression grew that we, like those other men and women, were pilgrims to a shrine, moving towards something vaguely hostile, hidden in the dark.

Then came a low chamber, very black. We circled the wall. Suddenly the lamps' ray flashed forward. Light fell across the center of the room, on a rock, on two forms—the bisons. Miniature in the glistening clay of the cavern, they seemed to move away from our light into the farther darkness. Never was anything so full of motion and so intensely quiet, so alive and so aloof, as if the breath of their being was eternity.

We crouched in a still circle, gazing at this perfect thing which Nature had so closely hidden and so startlingly disclosed. Time had dealt gently with the bisons; no rocks had fallen, no water risen to harm them. At some far-off date the clay had dried, then returning humidity had restored its original plastic

condition. During the process several cracks had formed across the bodies; the tail and the horn of the forward figure had fallen; but otherwise the bisons were as on the day of their last worship or creation.

They are a pair, a female followed by a male. The female is about twenty inches long, the male longer and proportionately larger. Modeled in high relief against a rock which the sculptor had found fallen from the roof, the technique shows the finished realism of Magdalenian art. Mane and beard are indicated with fine distinction, the beard incised with a delicate bone tool, the mane with a blunter instrument, perhaps the finger, to indicate its coarse woolly texture.

Besides the central pair, two other bisons were found in the chamber. On the floor near the rock a crude outline had been traced, and near by lay a very small bison, a statuette partially modeled.

"We thought it was only a stone or a formless lump of clay," explained the older brother, who had arrived with his group, "and we did not pick it up until days afterwards. It is now in the Museum at St. Germain-en-Laye. But more important than the little statuette is the outline traced in the clay, for it helped us to discover the technique employed by the hunter-artist. First he traced the image he intended to model with a bone tool. He used various forms of spatulæ, some round and some triangular—you can see the marks they left in the clay where he planted them when not in use. Once he had traced the outline, he passed a sharp knife blade underneath, lifted out the entire

THE ENTRANCE OF TUC D'AUDOUBERT
Photograph by A. W. Pond.

THE BISONS OF TUC D'AUDOUBERT
Photograph by Max Bégouen.

silhouette from its clay bed, and placed it against a rock before beginning his modeling. Not far from here we found just such a silhouette which had collapsed as the artist lifted it from the floor."

"You believe, I understand, that these bison, unlike the engravings in the lower gallery, were not made with the idea of killing a single victim, but rather with the intention of increasing the supply?"

MURAL ENGRAVING OF WILD CATTLE, GROTTE DE LA MAIRIE, DORDOGNE

After Breuil.

"Yes," was the answer. "The presence of a male and a female would seem to indicate propagation, like the engraving of the bull following the cow at the *Grotte de la Mairie* in Dordogne."

"My objection to that," the man from Algeria suggested, "is the fact that the sex itself is not represented. In the female you might perhaps say that it is indicated, but in the male it is clearly absent. That is extraordinary, for primitive peoples the world over represent the idea of fecundity by the organs of gen-

eration. It is equally extraordinary in the case of Paleolithic people, for you remember that the Aurignacian Venuses and the male figures in the caves of David and *Le Portel* all have the sex clearly marked."

"I admit that it is a cultural problem not altogether solvable," the other replied, "but if you will follow me, I will show you a few added reasons for my belief."

We crept after him, leaving the shrine of the bisons, with our acetylene lamps and our theories which had flickered so dimly across their night.

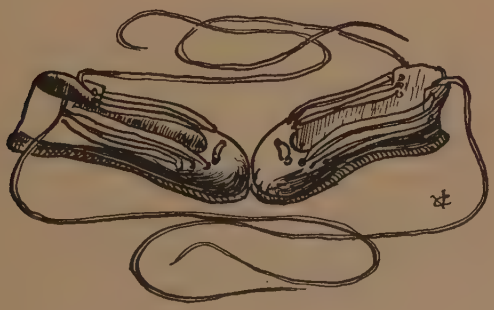
A slope of clay fell away to a small chamber, so abrupt that bears had left not only deep claw marks but even the impression of their furry bellies on the steep descent. At the entrance of the little room we noticed several basin-like depressions—sculptors' quarries whence clay had been removed.

The room itself was small and low, too low to permit a man to stand erect, and yet the clay floor was patterned by a multitude of little human heels. So hard they had been pressed that, moulded in the clay and preserved by the stalagmite, even callosities had been recorded. Around and among the heel prints ran an enigmatical system of curved lines. These, and the fact that here only the heel had left a print, whereas in the other galleries the whole foot appears, seemed to indicate an unusual posture. It is the habit of certain primitive peoples to place only the heel on the ground in dancing. This little chamber, then, might well have been the scene of a sacred dance connected with the ritual of the bisons. That this might have

been a cult of fecundity we now saw further proof: in an angle lay several phallus-shaped objects, and just beyond, an exaggerated human phallus had also been modeled in clay.

Whatever the inspiration of the ceremony, it must have been held only once, for there are no traces of earlier half-effaced heel prints. Why was the dance never repeated? Why was the third bison never finished, the fourth left flung on the floor of the cave? What chance drove the tribe from the cavern, what catastrophe, what blind fear?

We discussed a little and wondered more as we slipped and scrambled through the half-mile of gallery that lay between the bisons and the boat. Once again the gray light, then the meadow by the Volp, but no longer in afternoon brilliance. Sunset? Impossible! We had spent four hours in the cave. Had it seemed long or very short? We could not tell. For to all of us the afternoon had been a previously unimagined state—timeless.



CHAPTER V

BACK AT MONTARDIT

JUST how small and poor the Violet Hole might have looked to us after the splendors of our pilgrimage, we do not know. For when we next climbed the slope of Montardit, it was to prepare for two distinguished visitors, and our pride was protectively awake.

In an early-morning rain the man from Algeria and the Dordogne excavator, intrigued by our hopes of the rare Azilian civilization, arrived at the Catine. They viewed our patiently amassed collections, the breakfast table a litter of potsherds, crumbs, and flints, while we waited with legitimate anxiety the first authoritative verdict.

It did not come all at once. In fact, it never came in clear-cut summarization. For, like ourselves, our visitors found the cave at this point baffling. We had discovered, they repeated, a complete series of Neolithic pottery, but no polished stone; small flint knives and scrapers which might have belonged to any epoch from the Mousterian to the New Stone Age; and a harpoon of Azilian form executed with Magdalenian fineness of workmanship—all this in the damp, snail-

thronged earth that characterizes the Azilian period in the Pyrenees.

"Have you ever tried to retouch a flint, yourselves?" The Dordogne excavator with his fingernail chipped neatly along the edge of a thin blade. "That is a trick that every modern manufacturer of prehistoric flint implements can do to perfection. You remember," he turned to his colleague, "the wholesale business that used to go on in Dordogne?"

"Before the war," he explained, "a foreign dealer leased several of the richest sites in the Vezère valley, selling his finds to German museums. He seldom went near the excavations himself; the workmen brought in their finds and were paid by the piece. On a poor day they manufactured a few themselves. I have seen flint-working that a Solutrean would have been proud to own. The technique was exact, the retouch perfect. But both the dealer and his helpers overlooked the fact that when a piece of flint had been used to scrape and cut and saw, and then has lain in the earth for ten thousand years, the edges do not bear fresh scars."

"However," the man from Algeria supplemented, "the purchasers were satisfied, and no one knows how many of those ingenious executions are now adorning the museums of Central Europe."

The rain was nearly over and we were about to start for Montardit. Before the door the last speaker, surveying the landscape, asked:

"Did you say that this is the river that flows from the Tuc d'Audoubert?"

"Yes, that is the Volp," Paul replied, "but here in the district it is renowned for something not quite so prehistoric—*écrivisses*."

He had uttered a magic word, for the unconsidered crawfish of our American brooks are, deservedly, one of the most desired and costly dishes of the French restaurant.

CRAWFISH OF THE VOLP

"There are many? You fish for them yourselves?"

"Every day or two. If you should care to try your luck. . . ."

Five minutes later the gentlemen of science were off for Mérigon, where, in a deep pool unknown to the local crawfish enthusiasts, we had found an undiminishing population of lively little crustaceans. Fishing for *écrivisses* is no lazy sport. You lower into the water perhaps a dozen flat circular nets to the center of which is attached a chunk of raw meat, and leave them for the guests to assemble, fishing meanwhile in midstream if you are energetic, with a long-poled net for

the particularly alluring and unwary. Then you dash from net to net, hauling them up with a sharp jerk and dumping the kicking green contents into a strong, safe basket, whence issue sounds of intertribal warfare for some time to come.

It was noon when we met again in the Violet Hole. The fire near the entrance was crackling away for the chops and coffee when Madame Jacquelard appeared with a high-heaped platter of miniature lobsters which had cooked on her hearth.

"You are probably far from being the first fishermen to cook their spoils in the *Tuto Biouleto,*" the Dordogne excavator remarked. "Did you ever hear of the scientist who made an experiment in real Paleolithic living? He wanted to know just what it meant to be a Stone Age man. So he found a cave and made a fire by rubbing sticks together. Then he sat down by the fire and made an axe of flint. With the axe he cut down a tree and made a bow and arrow, and with the bow and arrow he shot a rabbit which he brought back to the cave and cooked for his supper."

We could not but admire the application of so earnest a prehistorian, though his culminating exploit seemed appallingly slight in comparison with the effort expended.

Luncheon finished, the detailed inspection of the cave began. The trench now descended a yard and a half from the green line of 1905. The peasants had removed about eighteen inches of this; the remaining depth we had excavated. We were now at virgin soil.

Our visiting authorities inspected the floor of the trench and the section of earth that formed the wall of the excavation.

"It is remarkably poor," the Dordogne excavator commented. "A small habitation in a country where flint was rare and full of defects. You may never find any fine pieces here. But keep on. Although you have no certain proof yet, there are many signs pointing to the Azilian. And if you can unearth a complete industry, however poor, it will be more valuable for our knowledge of the past than dozens of museum pieces."

"But there is always a chance of finding works of art in case you are working in a true Paleolithic layer," the man from Algeria encouraged. "The most beautiful of Aurignacian Venuses, the Venus of Lespugue, you know, was discovered only forty miles away in a cave no larger than this. You have something here, if you have the courage and patience to keep on."

* * *

Our guests departed, we settled down to weeks of steady digging. The people of Montardit now accepted not only our presence, but our comparative sanity and the authenticity of our finds. This was not based, as with our friend the blacksmith, on an understanding of our work, but on the fact that they knew us personally and that therefore it must be all right. But of unseen archeologists in places no farther away than Montesquieu-Avantès they had the darkest suspicions.

The popular explanation of the bisons of Tuc d'Audoubert was simple: wasn't the Count's oldest son known to be something of a sculptor? And as for the four hundred engravings in the *Grotte des Trois Frères,* they were quite willing to admit that it would be hard to find more industrious young men than the three Bégouen brothers.

Montardit, however, was proud of us, sometimes to an embarrassing degree. Having discovered that after five hours of bending over a sieve it is not always restful to spend the noon hour bent over a campfire, we had formed the habit of descending to the valley to "eat the soup" at the village inn.

'Phine, the mistress of the inn, was a person. A powerful woman, at seventy she descended the mountain path from the drying ground erect and light beneath the weight of a dozen great homespun sheets. Once she had been the object of many a bitter rivalry in the days when all the cattlemen on the road between Cazères and St. Girons broke the night at the inn of Montardit. The house stood over the very edge of the Volp, a roaring little cañon for the moment, and on soil which of itself could not produce a blade of grass. But there was a garden. 'Phine and her husband, carrying the earth on their heads—ten thousand baskets, the legend runs—had made it, fifty years before. 'Phine's broad face was wrinkled and brown from years of toil and hearth smoke, the strong hair parted beneath her tight black cap was streaked with gray; but two things had remained unchanged, her

capacity for labor in house and field and the remarkable force of her voice.

As we sat around the long table in the dining room, dirty and close behind its eternally fastened shutters, eating the fare of the entire countryside—the green-bean soup full of bread, followed by the potatoes, carrots, and beans that had cooked all morning in the pot, and the pieces of goose salted in its own fat with which the peasant soup is invariably flavored—'Phine, serving us, roared forth to any transitory fisher of *écrivisses* a voluminous and vivid explanation of the archeological proceedings in the cave. This she accompanied by brief but impressive biographical sketches of the members of the Expedition. A favorite climax was to turn upon the anthropologist, who as a newcomer to Montardit could not be expected to understand what was said to her—or of her—in an ordinary tone, and with a blast calculated to clear the obscurities of American understanding she would hurl: "That little Mademoiselle is extremely sick"; and while the incredulous gentlemen closely regarded the embarrassed countenance of her sunburned victim, 'Phine, of a country where the fresh loaf is supremely the staff of life, flung the fatal bomb, "She eats no bread!"

* * *

Virgin soil of the *Tuto Bioulet*o, like much of the preceding stratum, proved to be a muddy layer, but the proportion of stones had diminished, and its distin-

guishing features were the masses of snail shells and cinders from the primitive fires and hearthstones cracked and broken by the heat. From time to time we found masses of red ochre, pigment used by Paleolithic peoples in their mural art and by the Azilians to paint their pebbles with the occult signs that mark their epoch so strangely apart.

Our trench descending day by day yielded its store of animal bones and implements. The proportion of flint chips to actual tools remained great, but no more bone implements had come to light. An interesting addition to our picture of the civilization of early Montardit was furnished by a series of curved stag horns, the lower ends showing severance by a flint knife. The kitchen refuse included no bones of the domestic animals that came into Europe with the Neolithic peoples, nor did we find the extinct reindeer and bison of the late Paleolithic days. Red deer, boar, wild cattle, they were modern species that we disinterred—the fauna that the excavator Piette had found at the type site of the Mas d'Azil.

All of this was treasure, invaluable to the reconstruction of man's past. But as day succeeded day it often seemed meager in relation to the time expended. To encourage our waning zeal we evolved two forms of scientific diversion. Whenever the monotony of sifting grew too heavy, one of the three would descend into a crevice opposite the "*trou de la vipère.*" This cavity, sloping down to the right beneath a red-stained vault of limestone, had been our first hope of

a second chamber. Within it, although we had reached the rock wall behind, we found culture layers continuously rich in bone and horn. Here one had the facile pleasure of amassing the archeological contents of ten ordinary sieves in as many minutes. Obviously, however, if this were practiced too often, the débris would spread beyond the hole and complicate our stratification. But there was a second source of diversion which now and then filled the half of a dull day with color and excitement. We explored the valley.

* * *

To explore, to seek the unknown on the well-trodden highway, to probe for mystery in the midst of corn fields and cow pastures—all this calm contradiction added an equivocal charm. The high mountain country of Ariège is wild as its great caverns; across the river Arize the Mas d'Azil lies, an isolated monster; but the caves that the Volp has worn in the soft stone of the Plantaurel are at once intimate and remote. Gathering blackberries on the slope, you part the bushes suddenly before the door of a Stone Age dwelling; or stopping to rest on a round gray boulder, you find beneath your feet the head of a snake-like tunnel coiling away to some Paleolithic stronghold deep in the heart of the hill.

We crept into tunnels, ransacked chambers, fell down holes. In *combinaisons* no longer stiff and new but daubed with candle grease and caked with cave mud, we set out upon each scent of prehistory. The

first plunge into the unknown never lost its thrill, but frequently there was no other, for in the majority of the caves we explored, fallen rocks and earth blocked the passage. The old civilizations that undoubtedly existed in these natural habitations lay buried beneath a weight of débris which we had neither time nor funds to lift.

Our adventuring began at home. In the long line of shelters at Montardit, between the valley and the Violet Hole, we tried to squeeze into four or five cavities of varying importance and possibility—the Hole of the Badger, down which some terrified little rodent scampered before us with the echoing thunder of a retreating mammoth; mere niches; chambers which held the hope that when we should have emptied the Violet Hole to its still illusive bottom, we should find in their excavation the remains of a civilization contemporary or ancestral.

Jean-Marie insisted upon the exploration of a cave behind his home, a spot well known to the superstitious because of a flat-topped boulder before the entrance called the "Sorcerer's table" which was connected in some mysterious way in the folk mind with the idea of human sacrifice. But to us, the cave was memorable chiefly for the moment when, crowded in a remote flat corridor between earth and rock, our last candle went out. One hot afternoon we scrambled up to Montardit and down the other side, across the Volp, and up again to the rock shelters of Mauvesan. And on a day of down-pouring rain we scandalized our vil-

lage by climbing up through slimy mud and slippery grass to the cave of Ste. Croix. Tradition said this was a great cavern which ran all the way from the far side of the town to a roadside crevice near the Catine, but all we found was a lofty chamber closed by an abrupt wall of fallen rocks, the walls adorned with the record of the satisfactory love affairs of several generations of Ste. Croix.

Our greatest adventure we found at Mérigon. Mérigon, with its face to the sunny roadside and its back to the dark gorge where the Volp rushes past the Plantaurel, has been the haunt of something wild and sinister. The peasants called it *la Peur*, the Fear, All one summer it blasted the valley. Crops drooped, cattle died. There were cries in the night, whirring of wings where no birds flew. At last the men of Mérigon set out to hunt *la Peur*. Guns in hand they scoured the fields, the river, the rocks, until some one—with a silver bullet—shot it down. He brought back no trophy, only the vague word of having killed "something like a bird," but from that moment the blight was lifted from the countryside. To-day you cannot find a man in Mérigon who will admit participation in that hunt. But there is something in the atmosphere of the valley suggesting that if *la Peur* should rise again, there would still be men to hear the flutter of its wings.

Behind Mérigon, above the roar of the river, the caves piercing the Plantaurel are very different from the prehistoric homes over the meadows of Montardit.

MÉRIGON

SIFTING IN THE VIOLET HOLE

Perhaps it is only the heavier foliage, the trees and shrubs and trailing briers that block the path to the openings they hide, the lack of fields and cattle and purple roofs in the perspective; perhaps it is merely the sudden raging of the quiet Volp. But whatever the cause, there is a supernatural wildness in the caverns of Mérigon. Their very number is illusive, and the peasants only murmured vaguely of holes large and small; for there is general agreement among the natives of Ariège that a cave is a good place to keep away from. The sentiment may rise wholly from the fear of haunting spirits, or be founded on the instinct born in far-off men of Montesquieu and Mérigon and Montardit when he who was not filled with a wholesome fear of adventuring alone into the dark was disposed of by cave bear or lion.

Jean-Marie, however, was a modern young man. Jean-Marie worked for us, and it was from the results of his independent Sunday explorations that we began to solve the cave complex of Mérigon. We had long viewed the rows of shadowed holes far above the spot where the river leaves its bed and vanishes into the hill; we had gazed with helpless rage in a boatless country across the deep stream at a gray, rust-stained portal out of which water flowed as from the shrine of Tuc d'Audoubert. Now, thanks to Jean-Marie, we entered below the crest of a hill a swift-descending little cave where we scratched up a medieval spindle whorl and flint firestone, and finally arrived at the *Tuto Herido,* the great Cold Hole. Some said it hollowed out the

entire hill, others that it ran for only a few yards, but all agreed about the icy blast that issued from its mouth.

After much vain searching we came upon the cavern in the wildest spot of wild little Mérigon—masses of somber green growth over grim rocks and, low and black, the entrance to the Cold Hole. We stooped, and a chill draft of air struck us in the darkness. Crawling on hands and knees for a few yards, we straightened ourselves under a great dome, the source of the frigid air. A chimney of rock and earth mounted like a spiral staircase, up which Paul and Jean-Marie took a brief, painful trip. The corridor, narrow but high, ran on between marble walls in whose water stains we tried vainly to decipher painted bisons. Then, at the right, we came upon a gallery where water lay black and deep. There Paul, a rope about his waist, waded forward until the bottom became too uncertain to venture farther without means of sounding. So for the day we abandoned the idea of crossing the depths of the flooded gallery for a climb in higher, dryer parts of the Cold Hole.

We ended with the most dangerous of our exploits. The chimney we scaled was an almost perpendicular slope of débris covered with a thin coating of slippery clay and stalagmite which crunched ominously underfoot. Overhead balanced unsteady blocks of breccia. At the top of the chimney we crept across a narrow clay-smeared bridge. We dropped a stone. No sound. Then came a series of labyrinthian corridors,

and at last a high chamber with a single pillar, cold white. Clay lay upon the top . . . bisons? Flat; no modeling. And this was the end. The farther wall of the chamber was not rock; a curtain was drawn across it of heavy folds of stalactite. But our journey was finished.

It was left for Paul to explore the course of the underground stream to its end. One afternoon of the *vent d'Autan,* that stifling wind that wilts the Midi with the heat of the Sahara, he took lamp and rope and set off alone for the *Tuto Herido,* on pretense of a fishing excursion which we had rejected with mockery. He was gone for hours, until long after nightfall, and it was to a relieved pair that he recounted his adventure after that evening's late supper in the bright kitchen of the Catine.

"I arrived at the edge of the water, this time with a stick I had cut outside the entrance," he began. "I sounded as far as I could, and by throwing the light of the lamp forward I saw that a few yards ahead the gallery made a sudden turn. I took off my clothes, and wearing only my *combinaison,* and with matches and candle under my cap, I stepped off into the icy pool.

"At first the water came up to my waist, so cold it took away my breath. After a second or two I was able to go on, and, sounding every step, I reached the turn. Above me the roof grew higher, the stone of the vault worn by the water that must rage through like a torrent during the winter. At the right of the corridor

I found a little bank of stone and climbed out on solid rock.

"I examined the walls. Nothing but icy damp. The water below was so clear that I could see the bottom covered with fine sand and spangled with mica.

"I slid back into the water. Farther on, at the end of the corridor, there must be a dry gallery. . . . I went on, sounding all the time. Once I slipped into a deep hole; though I held the lamp high over my head, water splashed over it. From then on it was only a spark. I could just make out that the corridor still continued.

"I lighted a candle, hung the lamp from the top button of my *combinaison,* and pushed ahead. By that time I was accustomed to the chill of the water. The candle dripped flowers of wax which floated around me. Shadows danced on the wall. Was that something—an engraving? No.

"I went on and on. Another turn. Deeper water. I held the candle in front of me at the water level: two yards beyond the corridor ended in a *cul-de-sac.* A vault of gray, dripping marble. No exit. Not a trace of a fissure. A spring, or a well. I sounded the bottom. No passage under the rock. A sand siphon, probably. Wall on all sides. I had gone through two hundred yards of ice water—for nothing."

* * *

It was then that we decided to go afield, to visit the scene of more successful explorations than our own—

in a word, to complete our tour of the painted caverns of the region that lay about us in a vast circle drawn from the Garonne valley to the high barrier of the mountains.

CHAPTER VI

A CAVE OF THE PLANTAUREL

"COULD you give me a little more information about our destination?"

We were seated in a box-like third-class compartment of a little train that panted jolting up the long grade towards Foix. After a twenty-mile ride over the hills from Ste. Croix, a dash on foot through the crowded cattle market of St. Girons, we had arrived at the station only just in time to swing ourselves aboard. Paul was the first to recover his breath.

"Could you give me . . ." he began again. The anthropologist handed him an open notebook.

"'*Le Portel,*' he read, '. . . one of the first-known painted caves of the Pyrenees region. Discovered in 1908 by a naturalist in search of cave fauna.' But we know all that—" he broke off impatiently. "What I meant was, who is doing the present excavating? And what is the identity of the gentleman who so amiably invited us to lunch?"

The anthropologist wrinkled her brows.

"I . . . think it's the schoolmaster," she suggested doubtfully.

"Not the *curé?* It is generally one or the other.

Both professions have furnished a liberal quota of prehistorians. They have a double advantage, considerable leisure and being on the spot."

When the train slowed down at Baulou, our destination, we found the "schoolmaster" on the platform, a slender dark-eyed gentleman who received us with quiet courtesy and assured us that our bicycles, which had not accompanied us in our lightning passage through the station at St. Girons, were quite unnecessary as he had provided a conveyance. On the other side of the barrier a gray traveling coach with a plump bay mare and a driver in a short black smock stood waiting. As we followed our host through the doorway of the station, two of the Expedition exchanged hurried whispers: "Try to find a way to pay for the carriage," we warned our companion, who nodded a hasty affirmative. He had no intention of letting a country schoolmaster, whose salary in the region rarely exceeds six hundred francs a month, pay a livery bill of possibly fifty francs.

"If you have no objection, we will go directly to the cave," our guide informed us as we climbed into the gray coach. "There is ample time before lunch, and besides it is directly on our way."

The road wound up from the station in a series of corkscrew curves. In a few minutes we had left Baulou, its stucco station and scattered red roofs, far below. A sharp turn brought us into a high valley, rock-strewn and wild, its steep sides overgrown with briers and scrub oak. A wall of naked limestone

streaked with sharp blue shadows in the morning light closed the farther end.

"That is the Plantaurel," our host explained. "You know it, of course. It drops away from here to the Mas d'Azil, then on to you at Montardit. The cave of *Le Portel* pierces it from side to side. In prehistoric times it was probably the outlet of a lake. The present entrance opens just beyond the crest."

As he spoke we reached a notch in the gray rock wall, marked with the customary cross. Beyond the pass the wooded north slope of the ridge hung above a fertile valley floor, checkered with pastures and wheat fields. To the right the vertical lines of a château rose above a park of dark oak trees. A little boy in a black pinafore, our guide's eight-year-old son, stepped shyly towards us as we climbed down from the carriage. He preceded us on the path that zigzagged down the slope between banks of heather and silvery clumps of lavender and brought up at last before the low entrance of the cave of *Le Portel*.

Having donned our customary cave apparel, we entered a short limestone tunnel which opened into a narrow fissure plunging abruptly downward. The galleries containing the wall paintings lie many feet below, opening out like the fingers of a hand from a spacious central chamber which glistened frosty white with its coating of stalagmite. Overhead the vault was studded with the mutilated stumps of hundreds of stalactites, sacrificed during the past century that a gentleman of the district might build an artificial grotto on his prop-

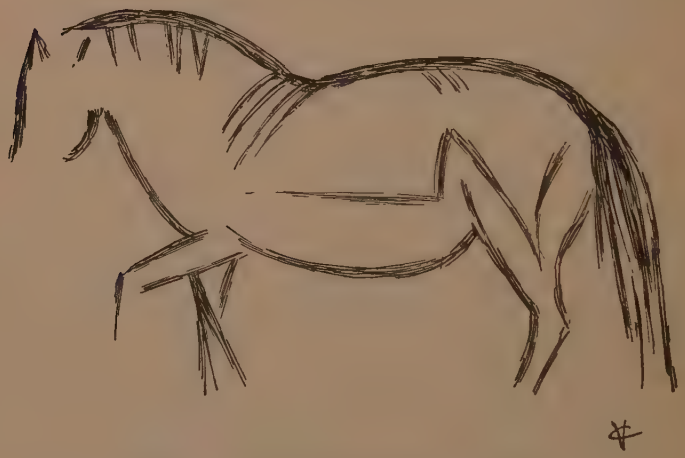
erty. Years before the frescoes were discovered, the cavern was well known to prehistorians. It had even been superficially excavated, had yielded traces of Neolithic occupation, together with human bones and those of Quaternary animals. At Toulouse we had seen recent finds from a Magdalenian hearth of the cavern —delicate javelin points of reindeer horn, perforated

MAGDALENIAN CARVING OF A HORSE'S HEAD, IN IVORY, WITH CONTOURS CUT AWAY, FROM LE PORTEL

ivory disks, and one little horse's head with contours cut away, of particularly fine workmanship.

Only one gallery contains well-preserved wall decorations, those of the rest of the cave being considerably effaced. We counted over fifty wall paintings in the outer galleries—bison, horses, and reindeer in black and red, with horses predominating. Close to the cave floor we observed one little red horse barely ten inches long, finely executed in flat tint with engraved outlines, the careful technique of which, in addition to its dis-

proportionately long neck and slender limbs, recalled the late Paleolithic paintings of Spanish caves. The others represented the sturdy mountain ponies, spirited and stocky, with arching neck and mane erect. Paul made a sketch of one of these. Across its flank a series of horizontal strokes seemed to mark the high lights



MURAL PAINTING OF HORSE, LE PORTEL

of its glossy coat, a style which we saw repeated in several other animal figures.

Most curious of the first frescoes was a series of three grotesque human forms. The most important of these had been painted in red outline on the concave wall of a little niche: the figure of a man, the head done in profile and the rest of the body facing front. A ridge in the rock formed an enormous vertical phallus. The second was a vaguely human silhouette outlined

in red with rounded back and pendent arms. It wore horns and a tail, characteristics which we were to see repeated in the painted figure of the Sorcerer in the cave of the *Trois Frères*. At the end of a gallery we were shown a third figure, covered by a thick coating of stalagmite but clearly visible: a long head with retreating forehead and projecting jaw, sketched in black outline.

"How strange it is," Paul, his shoulder braced against the rock, was copying off the clearest of the three figures, "how strange it is that, given the amazing accuracy of their animal drawings, the Magdalenians should fail so lamentably every time they attempted human representation!"

"But are you sure that these grotesques are serious attempts at representation?" Our guide set down his lamp while the rest of us gathered within earshot. Technical discussion, always meat and drink to prehistorians, has a keener flavor when one is squatting on one's heels on a moist clay floor in the misty halo of an acetylene flame. "My own belief," he continued, "is that figures such as these are intentionally grotesque. Mere masks, you understand."

"Hm, you think it is a question of taboo?"

"Precisely. We find the same idea among primitive peoples to-day, that to make a drawing or an image of a living being gives one supernatural power over the man or animal it represents."

"Then the absence of human figures, aside from these very schematized forms, would indicate that the

Magdalenians were far from being a warlike folk?" came a voice from the shadow of the cave wall.

"That may be stretching a point." The artist shut his sketch-book with a snap. "But it all goes to prove that Magdalenian 'psychology,' if you can call it that, was a pretty complicated thing. At any rate I have never believed that men who could draw animals in so masterly a fashion were technically incapable of representing their own fellow beings."

"It is clearly a question of taboo." Our guide rose to his feet and gathered up the lantern. "Look at the work of the Aurignacians. Not one of their modeled figures has a face, though the rest of the body is executed with careful fidelity. The Magdalenian Sorcerer in the *Trois Frères* is also admirably drawn, but he wears a mask."

Having reached the end of the gallery, we were shown the part of the cavern that our guide was then engaged in excavating. It led to a rock chamber barely three feet high and partly choked by stones and clay from an ancient landslide.

"This was undoubtedly an earlier entrance to the cave," he explained. "For here I have uncovered a Mousterian layer, with characteristic points and scrapers cut from quartz and quartzite. We are very near the surface of the earth, a fact which was brought home to me somewhat disagreeably one afternoon when someone set off a blast in a field nearby while I was here at work. I thought the whole cave was coming down on my head." He grimaced at the recollection.

HUMAN REPRESENTATIONS IN PALEOLITHIC ART

The human faces above are Magdalenian sketches in the cave of Marsoulas. The monstrous forms below are Aurignacian engravings in the cave of Altamira, Spain. After Breuil.

MURAL PAINTINGS OF A MASKED HUMAN FIGURE AND A BISON, LE PORTEL

We found ourselves eyeing the low clay ceiling and its network of fissures with considerable apprehension. The air, never very plentiful in that damp little cell, had become choking with the fumes of acetylene. It was with distinct relief that we crawled back into the corridor we had left a few minutes earlier and ascending a stairway of stalagmite, passed under a stone archway leading into the final gallery of the cavern.

It was a long limestone tunnel whose smooth white vault had afforded an excellent "canvas" for the work of the cave artist.

Our attention was first drawn to two engravings—the only ones that *Le Portel* contains—representing a horse and a bison, cut with a careful tool in the soft stone of the right wall. A few yards beyond we crept one by one into a rocky niche which was ornamented with little paintings in black outline—a horse, a bison, a wild goat, the curved and branching antlers of a reindeer. Then the flame of our three lanterns flashed full upon the panel of the bisons.

The great beasts stood three in a row—two face to face and a third a little apart from the others, the finest workmanship and best preserved of all the paintings of *Le Portel*. The third of the series showed a technique different from that of the two others. It was painted in flat tint with the horns, back, and tail merely outlined. A series of engraved lines emphasized the details of the drawing. It was evidently the work of a painstaking artisan, but the two other animals had been drawn by an artist. The central figure

was magnificent. Every line of the beast thrilled with life; head down, feet thrust forward, and back arched, it seemed to snort with rage and pain. After one long look Paul sat down with his sketch-book while the little boy held a light close to the wall.

As he worked, the others explored the few remaining yards of the gallery, which finished abruptly in a *cul-de-sac*. Other paintings, bisons and horses, decorated the white vault, but none was worthy of comparison with the big panel. One little reindeer, however, with lifted head and long antlers sweeping its shoulders, caused the artist, who had rejoined the group, to heave a sigh of regret as a glance at his watch revealed the lateness of the hour.

By the time we had climbed up the steep passage leading to the sunlight, three of the little group were keenly aware that we had passed four hours underground. It was two o'clock . . . and we had breakfasted at four!

"I don't want to hurry you," our host insinuated politely, "but they have been expecting us in the valley for over an hour. Fortunately it isn't far. You can see the property from here." He waved a hand towards the clustering towers of the château. Paul cast a mischievous glance over his shoulder towards his two companions.

"Don't you think it will be just as well if I don't offer to pay the livery bill?" he murmured as he helped them into the waiting carriage.

CHAPTER VII

MAS D'AZIL

GLISTENING dawn mist lay along the crest of the Plantaurel as we drove from the château the following morning. Our stay had been prolonged through a sunny afternoon and a long evening of folk-songs in Ariège patois around the open fire. After a tranquil night in one of the square stone towers, we were starting out again, refreshed and eager, on our ride through the hills to the cavern of the Mas d'Azil.

Overhead, the sun began to streak with yellow light a row of mountain peaks, so pale they were scarcely visible against the morning sky. Down in the valley, dew lay like hoarfrost on the fat meadows; files of cattle, driven to water, zigzagged down the slopes from the upland farms.

We found our bicycles at the station. Loading them aboard a train that came rattling down the grade from Foix, we hoisted ourselves into a third-class compartment already filled to overflowing with peasant women and baskets on their way to a local fair. Fortunately for us, we had but a few miles to cover. Balanced unsteadily in the narrow aisle between two rows of

knees, every lurch of the train sent us headlong among black kerchiefs and alpaca-clad bosoms, while hens squawked, women giggled, and stalwart blue-clad *"maquignons"* [horse dealers] leaned over the low partitions to crack Rabelaisian jests at our expense.

Two stations down the line we swung our dizzy selves out into the air again. A few minutes later we were pedaling over the marble road that follows the River Arize. A long "coast" brought us down the slope to the level of the stream, and we entered a narrow gorge between ragged cliffs topped by a fringe of trees.

"Up there is the cave of Malarnaud," said Paul, pointing to a black opening high up on the gray wall at our left. Every anthropologist knows the jaw of Malarnaud, one of the most primitive of Neanderthal bones yet found. At Toulouse we had been told that the cave was to be reëxcavated. For prehistorians to-day look for details that the first explorers ignored. In Dordogne and in the Pyrenees many an art treasure has been found in the débris of old excavations.

Below the road, on the brink of the river which flowed deep and still between low banks, lay two automobiles, their front wheels locked together in a clutter of broken radiators and twisted mudguards.

"It's those crazy foreigners!" The autobus from the Mas drew up beside us; its driver clambered over the wheel to view the traces of the collision. "They run down from Toulouse every Sunday," he continued, "and go joy-riding about the country until nobody's

life is safe on the road." He rolled a leisurely cigarette. "Well, there are two of them at least that won't give us any more trouble. Crazy foreigners! Now, as for me. . . ."

A clamor came from the autobus. His passengers, on their way to the train for Foix, were growing impatient. The driver turned a deaf ear.

"Now, as for me," he repeated. "I never push her over sixty kilometers an hour, not even on a straight stretch," with a jerk of his shoulder towards the clumsy vehicle which certainly could not have exceeded half that speed without danger of flying to pieces. "This country isn't safe for automobiles," he went on sententiously. "If I had my way, nobody would drive anything faster than a *jardinière*. But try to tell that to the tourists. Crazy foreigners!" He hoisted his stocky frame over the parapet and made his way down to the water's edge for a nearer view of the catastrophe. We left him to his contemplation.

"A true son of the district," Paul remarked as we picked our "safety" bicycles out of the brambles. "Talk about insular—they are the worst specimens in the whole countryside. Even the war hasn't changed them. It's bred in the bone and dates from the time when the Mas was a Protestant islet in a hostile land. Every stranger from over the border is still a potential enemy."

Beyond Malarnaud the gorge of the Arize grew narrower. We passed beneath the ivy-grown ruins of Durban castle, perched high above us on a steep gray

THE PROTESTANT CEMETERY AT MAS D'AZIL

pinnacle. Directly across the ravine we saw the opening of the pit that the young Toulouse student had found littered with the bones of the cave bear. Another hairpin curve and the cañon widened abruptly into a valley of pastures and yellow poplars. A group of tiled roofs clustered about the white façades of a Protestant chapel. We were approaching the Mas.

As its name implies, the Mas d'Azil, House of Sanctuary, has been a place of refuge ever since the Benedictines built a convent there in the thirteenth century. But its chief renown dates from the Wars of Religion, when the Protestants of the district set up their stronghold in the great cave. Ever since those troubled days there has been a Protestant settlement in the valley of the Arize. Huguenot glass-blowers built their furnaces on the hillside, and the manufacture of glass thereby acquired a reputation of sorcery and black magic which is still legendary in the Catholic community. Traces of the struggle between rival religions are evident on every hand. Orthodox church and Protestant chapel stand face to face across the highway; twin cemeteries jostle each other at the crossroads. According to rumor, two noble families of the district, one Catholic and one Huguenot, have not exchanged greetings since the fateful St. Bartholomew's Eve.

A hundred yards before us the road disappeared. The valley ended in a *cul-de-sac* where a wall of limestone blocked the way. Our path veered sharply to the left. We had been expecting a village, but there was

the Mas itself, arching high and black above us, a hundred feet in the air. It had hollowed out the cliff until only a crust was left overhead, a giant vault of rosy stone curving in one unbroken arc. From the highest point a thin cascade of ivy fell in quivering green streamers. The cave swallowed the river and the road. As we advanced, the twilight deepened; wind throbbed endlessly, and the roar of water grew louder. A sharp turn, and the last ray of daylight was gone; there remained only the yellow twinkle of electric lamps along the roadway and the pale glow of lofty gray walls whose rocky surface, disintegrating through the centuries, let fall a continuous rain of soft dust which lay upon the *route,* the parapet, and the blocks of stone that checked the swift flow of the Arize, in a coating of feathery powder like finest ground cement.

At our left rushed the river, with the intensified noise of water in the shadow. To the right twin archways opened on impenetrable blackness. A high wall barred one of the openings.

"Tourists desiring to visit the excavations will find a custodian in the village," read a placard which we deciphered with the aid of our bicycle lamps.

While one of us went in search of the guardian of the cave, the two remaining members of the Expedition retraced their steps to the entrance of the cavern, where the sound of the river died out abruptly in a flood of blinding light. On the opposite bank heaped earth and stone piles along the rock wall of the Mas marked the site of the famous excavations that had

IN THE STREETS OF MAS D'AZIL

THE WESTERN ENTRANCE TO THE MAS D'AZIL

Photograph by N. C. Nelson.

revealed the Azilian people and culture to students of prehistory.

We picked our way over the stream on a series of blocks fallen from the vault which formed a primitive bridge above cascades and pools. Thirty feet above the water a labyrinth of little paths led between walls of stones. Splinters of bone and flint chips lay in the dust, with here and there the tooth of a horse or a deer, together with occasional fragments of rough gray Neolithic pottery. We hunted vainly for a cross section of the archeological layers; if such a cross section had existed, it was undoubtedly destroyed years ago by amateur excavators. We saw traces of their grubbings everywhere—rows of "prairie-dog holes" in the banked earth and beneath the stone piles, holes which threatened to bring the whole mass crashing down on the heads of unwary visitors. These mole-like labors had so disturbed the surface of the site that even with documents in hand we found it impossible to reconstruct the plan of the excavations.

"It would be easier to make a picture of the grotto as it was when the Azilians inhabited it," we decided, lifting our gaze from the tumbled earth to the rosy vault overhead with its swaying streamers of ivy. There at least nothing had changed since the Mas sheltered the mysterious tribe of harpoon-makers who fished and feasted, labored and slept, for century on century, in the shadow of the great rock.

A halloo from the other bank of the Arize told us that our companion had returned from his quest in the

village. He was accompanied by a stocky peasant in a black alpaca smock, who presented himself, once we had climbed again to the road after a second passage over the slippery rocks, as the custodian of the archeological excavations on the right bank of the river.

"The right bank, I believe, is a purely Magdalenian site," the anthropologist remarked as she fell into step with our newly acquired guide. The man looked blank.

"It is . . . it is all . . . Stone Age," he replied after a moment's hesitation.

"Of course. I meant to say that no one lived on the right bank after the Magdalenians, because the river kept overflowing into the inner part of the cavern. That was why the Azilians had to camp on the left shore near the opening." The guide seemed perplexed. "That may be true," he said doubtfully.

The artist came to the rescue. "Do you excavate any, yourself?"

"Oh yes, when I have the time. Last week I dug up the skeleton of a cave bear. But what I am really after," he lowered his voice confidentially, "is one of those polished stone axes . . . or . . . or a necklace made out of gold."

Paul's lips quivered suspiciously.

"That would be a great find," he agreed. "Only I'm afraid there is scarcely a chance that you'll uncover anything of the sort here in the cave. The site is too old. They didn't know anything about gold in those days. And as for axes. . . ."

WITHIN THE MAS D'AZIL

The guide looked crestfallen but not convinced.

"You may be right," he put in, "but just the same I'll keep on digging. I know a man who dug for twenty years before he found a necklace. Well, here are the present excavations." He shoved open a door leading into the wall where we had read the placard.

We found ourselves in a stone enclosure which reeked of dust and acetylene. Straight before us a wide gray slope led up into the darkness. There was a moment's delay over the lanterns before three acetylene flames shot out their forked white tongues and we set off, Indian file, in the wake of the custodian. At first we climbed—dust and rocks, rocks and dust, in swinging, shifting circles of light. Overhead and all about us, night, formless, impenetrable, in which our lanterns hung like a string of glowworms.

"Look down below," commanded the guide, stopping beside a horizontal stretch of wall. Our eyes followed his pointing finger. Far beneath us lay the Arize, its cascades luminous with greenish phosphorescence, its roar compressed to a thin murmur. Through the distant unseen opening of the cave, light filtered like a mist. We could make out the curve of the vault above us. At our left a dark arch, incredibly slender, stretched above a chasm.

"That is the *pont du diable,*" explained the guide. "I climb up there to set off red and green Bengal fire. If you would care to see it. . . ." He hesitated. We expressed our distaste for pyrotechnics. The custodian seemed relieved.

"I'm a family man," he confided, "and it's no joke risking your neck for one franc twenty-five centimes."

We climbed still higher. The guide extended his lantern over a rectangular pit in the clay floor.

"You see that hole?"

Bending over, we broke off a flake of clay.

"This is where you dug up the bear?" The custodian looked startled.

"How did you guess it? Yes, here is the skeleton." He indicated a packing case heaped with fossil bones of a splendid specimen, all in an excellent state of preservation but showing the marks of many fresh breaks.

"Is this your tool?" One of us picked up a wicked looking quarrier's pick with flattened heart-shaped points. The man nodded.

"The clay is so hard that you can't use anything else. As it was, it took me one whole day to get out all of the bones."

"I should think so," murmured the artist. He was examining the broken shaft of a femur, its polished surface marred with a dozen V-shaped scars. "If you are going to use a pick," he suggested, "I think you will find it better on the whole to use an ordinary one, even if you have to take more time. These things cut like razors and are always inclined to slip farther than you mean them to. With a common pick you would get better results."

"But it is all there," the guide protested.

"Except for a few pounds of chips," someone remarked *sotto voce*.

Not altogether pleased by the turn the conversation had taken, the discoverer of the bear turned away from his prize, motioning us to follow. He led the way through a rock passage and into a round chamber, so low that we were forced to advance on hands and knees, crawling among the trenches of sundry excavations.

"Over there on the wall are some animal engravings." He waved his lantern towards the end of the chamber where the vault was lowest. There, on a sloping plane of stalagmite, we found the crude outlines of several horses, mediocre examples of Magdalenian art, together with a tangle of, to us, meaningless scratches. A curious fissure in the wall of the chamber next drew our attention.

"We call it the portrait of Cartailhac," the guide explained; and indeed the broken line of rock bore a strong resemblance to a human profile. We had seen a photograph of the fissure in Toulouse, where a colleague of the venerable prehistorian had told us that Cartailhac himself had never accepted the strange rock profile as an authentic example of prehistoric art. The engraved lines that had been added to indicate the eye and beard of the profile might very well have been the work of later visitors to the cavern, whose names, scratched with a knife point or traced in candle grease, streaked the otherwise white walls of the low rock room.

"What is that hole?" Paul, a few rods away, was examining on his hands and knees an opening in the rock. The guide shrugged his shoulders.

"It's just a hole. No one had ever been inside it until a couple of weeks ago. I don't think you will find anything worth the effort." But our companion's head and shoulders had already disappeared through

THE "PROFILE OF CARTAILHAC," MAS D'AZIL

the gap. It was a tight fit; only after considerable effort did he succeed in drawing his hobnailed boots under the shadow of the rock. Then an arm pushed the acetylene lamp back through the opening and a husky voice demanded:

"Pass me a candle. I'm half asphyxiated."

Crouched on all fours, we peered into the hole. It ended a few yards away in a low chamber like an oven, barely two feet high in the center and sloping away rapidly all around. In the middle lay Paul, stretched at full length on his back, a candle burning at his shoulder while he scratched away industriously at his sketch-book held in the air a few inches above his nose.

"There is a little doe engraved on the vault," he called.

It was out of the question to try to join him in such cramped quarters; we had to content ourselves with craning envious necks through the opening while the artist finished his sketch. That done, he examined the rest of the low roof, swinging his body about like the needle of a compass.

"There are other lines, but I can't make out anything definite," he stated at last; and having completed the circuit of the chamber, he selected a spot where the roof was highest and rolled over on his face.

"No one has done any excavating here. The kitchen refuse left by the Magdalenians is on the surface." He tossed a bone splinter towards the entrance of the hole. Suddenly he gave a whistle of surprise. "Look at this!" The polished surface of a flint was reflected in the candlelight. "A double graver, just beneath the doe, left precisely where the artist laid it down when his work was completed!"

"Not really?"

In reply a hand appeared in the opening of the hole, a delicate graving tool of turquoise blue flint clutched in five fingers. An arm followed the hand, and the artist squirmed his way back into the outer corridor.

ENGRAVED DOE AND DOUBLE BURIN, MAS D'AZIL
Scale of the burin, 2/3.

"It is a mystery to me," he commented, beating the caked clay from his *combinaison* while the rest of the Expedition admired the delicate lines of the deer. "It is a mystery to me," he repeated, "when I think how I nearly stifled for want of air and all but put my shoulder out of joint sketching that little animal, that

the Magdalenian artist not only traced the original with every evidence of ease, but actually carried his lunch in with him."

* * *

The chimes in the church tower struck one as we wheeled down a long grade into the village of Mas d'Azil, deserted at that hour, for all the townsfolk were busy within doors. From behind drawn shutters came a clatter of dishes; the familiar odor of *"cassoulet"* filtered through the braided-twine sun curtains. Under the lindens on the common two shepherds in blue denim smocks had parked their sheep in the shade and were dining on sausage and mountain cheese, watering their dusty throats with purple streams pressed from their tasseled wine-skins.

We avoided the prosperous hotel on the square, frequented by automobilists, and chose an inn with a green branch over the door, in a dark old street of timbered houses where a population of lean dogs lay dozing in the sun and bedraggled ducks gobbled busily in the dust.

The hostess, an alert old woman with a rosy grandchild on her arm, gave a comprehending glance at our mud-stained clothes.

"You have been visiting the excavations? Then you've come to the right place. Monsieur Cartailhac used to stop with us every time he dug at the Mas. If you had let us know beforehand, we could have prepared you a special luncheon. But to-day there

is only *la soupe,* for my daughter and I have been busy all morning making preserves."

The low dining room was redolent with the sweet, heavy odor of hot quinces, *"codoons,"* the old woman called them. *"La soupe"* being interpreted liberally—*pâté de foie,* mountain ham, sausage, and cheese, we made a copious meal while our hostess warded off hungry flies and regaled us with village gossip.

"The Mas is no longer the same," she told us. "Great savants used to come here—gentlemen like Monsieur Cartailhac, simple and plain-spoken as if they were one of us. The whole village turned out to help at the excavations. My husband worked with Piette, and my son when he was a little boy dug for Monsieur Cartailhac. My husband knew the Mas like his own pocket. He and the blacksmith climbed down fifty feet of rope to explore holes on the upper terrace that no one has visited since. And then there was the *patissier.* He would rather have missed a fair than a day at the excavations. Monsieur Piette used to say that he would have invented geology if it hadn't already existed. But now all that is changed." The old woman sighed. "My husband is dead. Monsieur Piette and Monsieur Cartailhac are dead too. No one comes to visit the Mas any more except tourists in automobiles."

With the coffee arrived our friend the custodian, accompanied by a bent old man in an alpaca blouse who proved to be the archeological blacksmith of whom we had just heard.

"I thought I ought to bring him if you want to see the old excavations," the guide informed us. "He is the only man left in the village who knows anything about them."

The old man waved a deprecating hand.

REINDEER ENGRAVED ON HORN, FROM THE MAS D'AZIL
After Piette.

"I don't go there often nowadays, but there was a time when you couldn't have shifted a stone in any of the three excavations without my knowing it."

He discouraged us from revisiting the Azilian site on the left bank.

"It has been pulled to pieces so many times that you can't find a trace of the original trenches," he explained. The blacksmith himself had a vivid recollec-

tion of the excavations. He had found countless harpoons and painted pebbles. The Azilian layer was red, he told us, adding that the probable source of the red ochre used in painting pebbles was a mine several miles from the cave, a mine still exploited at the present time for coloring brick.

"But worst of all were the snails. Those Azilians must have eaten tons of them. While we were working in the layer, the shells cut our hands to ribbons."

The three of us nodded sympathetically and displayed our hands scarred from the last weeks of digging in the Violet Hole.

"And you have found harpoons? Good! Then your site is certainly Azilian." The old man spoke with the conviction of a trained archeologist. "They were a smart people, those Azilians, even if they didn't make any carvings. They at least lived in the open air and let the other fellows rot up there in the dark." He pointed towards the two black openings we were then approaching.

"All this earth underfoot may be full of things that would interest you," he announced as we walked across the level space that lay between the roadway and the second of the two cavities. "This was all a slide they brought down from up above when the road was being built."

"It would scarcely be interesting from an archeological point of view, as all the layers have run together, but we might pick up a few good flints." Stooping down, Paul ran his hooked tool lightly through the dust.

"There, what did I tell you?" He held out his hand. Two Magdalenian flints lay in the palm—a short blade with a scraper at the rounded end and an almond-shaped graver and scraper combined.

"They didn't have flint for larger tools, but the workmanship is unmistakable."

"Wait a minute." One of us reached a hand through the dust cloud he had stirred up at our feet and seized something between thumb and forefinger. It was a bone needle with only the barest fragment of the eye broken away.

"Extraordinary how anything so delicate could have resisted that landslide!" We eyed the avalanche of earth and rocks at the foot of which we stood. "Though being so tiny is probably what saved it. Any javelin points or bone carvings would have been reduced to powder."

At that point the blacksmith led the way across a floor of slippery clay to a chamber in the rock out of which opened a series of narrow corridors.

"Up there is a hearth which, so far as I know, has never been explored." He pointed to a black hole above our heads out of which water dripped in a succession of tiny drops. "Every spring the water brings down ashes and charred bones, but there is no way of getting up there without dynamiting a passage in the rock. Down here, you see, it is a ruin."

He spoke truly. Every inch of the floor on which we stood had been overturned as if by an army of treasure-hunters. Sadder still, the walls were hidden

MAGDALENIAN FLINT TOOLS FROM THE MAS D'AZIL

Upper row, two burins and combined scraper and burin; lower row, borer, double burin, combined scraper and burin, and scraper. Scale 3/4.

under *graffiti* of all kinds, scrawled with charcoal or traced with candle grease. Beneath, we made out fragments of Magdalenian signs in red ochre. There was even a little bison across which a certain Jean-Jacques

had written a statement concerning the nature of his affection for one Maria Pujibet.

We crawled into each of the corridors. They had been ransacked from end to end. And yet one of the three, running her fingers under a projecting ledge of rock, brought out a double graver of the same turquoise-blue flint we had found in "Paul's hole" that morning.

"The Mas is a big cave," the blacksmith remarked as she displayed her find. "There is probably as much as they have taken out still hidden in the earth, if we only knew where to look for it."

"I wonder if there might not be something under those rocks." The artist pointed to a pile of flat stones heaped against the wall at the foot of a fissure too narrow to admit the passage of a body. The blacksmith shook his head.

"All that is only débris from the trenches. They made that pile when they were working here in the center of the passage."

"I understand. But there is a bare chance that no digging was ever done underneath." Using his tool as a lever, our companion pried one of the stones at the base of the pile slightly from its bed. The clay soil was sprinkled with fine black powder.

"A hearth!" Flinging off his coat, he set to work clearing away the stone pile, seconded without great enthusiasm by the rest of the Expedition, while the custodian and the blacksmith seated themselves on a nearby dirt heap and lighted philosophic cigarettes.

MAGDALENIAN BONE JAVELIN POINT AND NEEDLE AND PIERCED SEA SHELL FROM THE MAS D'AZIL

Actual size.

It took a quarter of an hour to shift the stones and another to shove aside the caked earth. At last the original surface was reached—four flat stones of considerable size imbedded in the soft clay. By dint of

straining and tugging, three of them were lifted away, care being taken not to disturb what might be lying underneath. But the three depressions where they had lain revealed nothing beyond a thin coating of charcoal dust and a few fragments of bone. Paul, however, seemed to find encouragement in the sight. Stretched out full length, he gave the freshly uncovered surface a careful scrutiny.

"It is as I thought. It hasn't been touched," he exclaimed as he struggled to his feet again. The fourth stone, a tile of limestone three feet square, offered more resistance than its fellows. But, with the blacksmith aiding, the four of us succeeded in lifting the block a few inches from the earth. We propped it up with stones while the artist, on all fours, his cheek to the earth, passed his electric torch under the ledge of rock.

One long look and he was on his feet.

"Lift it off!" he commanded.

A moment of valiant tugging and the big stone slid from its bed and came to rest with a thud on the clay floor a yard away. And in the gap it had left, outlined in white against the earth, lay a pair of reindeer antlers, a series of unbroken curves from tip to base. But as we stooped to touch one of the slender bars, it crumbled under our fingers.

"Too many people have walked over those stones." Paul carefully lifted away the fragments that conserved a degree of solidity. "There's no doubt of its being a hearth." He held out a handful of charred

bone splinters. "And here is something better." It was a tapering javelin tip of reindeer horn, very old Magdalenian in form, its beveled base engraved with delicate feather-shaped curves. In the hollow where it had lain, something shone, a splash of rose pink like a flower petal. Brushing away the earth with careful fingers, we uncovered a sea shell, a little conch, brought from the distant Mediterranean to deck some warrior's breast or hang about a young girl's throat, fifteen thousand years ago. Holding it to the light, we saw that it was pierced with tiny holes for the thong from which it once had hung. Even the blacksmith was impressed.

"Joli, joli," he admired, studying the two finds in the lamplight as they lay on his broad palm. "If you keep on, you may find a few harpoons!"

He spoke too soon. A few Magdalenian flints, a handful of charred bones, and the little hearth, only a couple of inches deep, was exhausted. Below lay the flaked yellow "bear clay," the cave floor before the coming of man.

CHAPTER VIII

A DAY AT THE *TROIS FRÈRES*

WE had come back again to Montesquieu-Avantès. This time it was not the clay bisons that drew us, but a second cave of the region—that of the *Trois Frères,* reputed to be richest in Paleolithic art of all the caverns of the Plantaurel, but accessible because of its danger only to the hardened explorers we had become.

"You should have worn hobnailed boots." The young owner of the cave, owner and explorer of the Tuc d'Audoubert as well, surveyed our rope-soled sandals with disapproval. "You will have trouble keeping a footing on the wet clay. However, with these there will be no real danger." He patted the two heavy coils of rope we had borne across the stony pasture from a farmhouse in the valley.

"The entrance is much easier now than it used to be," supplemented his wife, arrayed like the rest of us in *combinaison* and *béret*. "The passage under the first big rock was suffocatingly small, and immediately afterwards one dropped off into space. Now at least you can see where you are going."

A few days before our visit the opening had been

enlarged by the removal of a boulder weighing several tons. Pried from the vault, it had crashed down into the pit below, split by the fall into countless fragments. Yet the entrance, as we saw it, was a hole not over a yard high and of equal breadth. We could look down a sloping passage, littered with stones, which a dozen feet away ended abruptly in blackness.

"The pit is about seventy-five feet deep," explained our host. "The upper part is not quite vertical; there are two ledges offering a slight foothold. But for the last thirty feet or more you will have to rely entirely on the rope."

We made ready for the descent. First, the guide rope down which we were to climb, hand over hand, was flung into the shaft. At the end of the other rope we made a loop.

"Be careful not to tie a slipknot," our host admonished, "or you will risk strangling when we haul you up. I speak from experience."

One by one, we adjusted the loop and entered the tunnel. Advancing on hands and knees, we reached the rim of the pit. Twenty feet below, a lamp we had lowered showed its yellow spark on the first landing.

"The pit is not a true passage," we had been told. "Formerly the entrance of the cave must have been very vast, extending from the vault above to what is now the bottom of the shaft. But the top caved in, leaving only a narrow space, the present pit, between débris and rock."

We were lowered in relays from ledge to ledge.

"Look out for the stones," warned our guide. "There are all the loose fragments from the big rock we sent down the other day." Even as he spoke there was a rumbling crash, and a jagged block shot down the shaft, missing the heads of two members of the Expedition by inches. From then on we proceeded more carefully.

At the foot of the pit a gallery opened to the left, a narrow winding passage leading to a little room, very low, where we were shown traces of a hearth. Here had been found a Magdalenian engraving of a trout cut on a fragment of bone.

Leaving the hearth behind us, we followed the low stone corridor to where two galleries led away to right and left. We chose the first—a tunnel of ivory-white limestone, streaked with innumerable fissures, the rock so dry and soft that much of its surface had scaled off and lay in powdery flakes on the cave floor. Among the fresh white scars where flakes had fallen, we noticed traces of color, and here and there the imprint of a human hand, white on a red ground of ochre.

"Sure proof that the cave was known to prehistoric men centuries before the Magdalenians came." Our guide pointed to the handprints, characteristic Aurignacian symbol, on the white wall. "There are eight in all; we counted nine at first, but an earthquake shook one of them down a year ago."

Returning to the main gallery, we turned into the passage at the left. It led rapidly to a second chamber

with branching corridors. One plunged abruptly downwards—a gray gallery with a hard stalagmite floor littered with bones, scattered loose on the surface or held fast in a coating of stone. Leg bones, heavy and thick, portions of skulls, greatest of their kind, all relics of *Ursus spelaeus*, the giant cave bear. Water had swept the floor of the tunnel, had washed the limestone walls. Traces of colored pigment, red, rose-pink, spotted the rock—remnants of ancient paintings, formless now and faded. On the left wall, a faint panel of dots, row on row, black and red.

We retraced our steps. Up and on, over a terraced floor of stalagmite basins, through a long white passage vaulted in an unbroken arch from base to base. To the right opened a little chapel in the rock, the walls incised with a tangle of engravings. We were shown the profile of a lion deeply engraved on a sheet of stalagmite. Here many a strange rite had left its trace: gashes and stabs marked the flank of the beast; countless blows had mutilated the head, which had been engraved twice—full-face and in profile.

Beyond the little chapel a low gallery led away into the darkness.

"This was our first entrance to the cavern," the guide informed us, with a gesture towards the opening. "A long, low passage leads to the out-of-doors, to the property of a neighbor of ours who is unfortunately indifferent to prehistory and hostile to archeologists. That is why," he paused with a smile, "we have been compelled to utilize the pit, which on the whole is less

fatiguing than the long crawl from the original entrance."

We had reached a chamber, lofty and white, draped in long folds of stalagmite. To our left a sloping sheet of clay dropped like a gray cascade from the shadow overhead.

"Up there must have been another pit." The speaker pointed up the gray slope. "For here at the bottom we have found a number of animal bones—the complete skeleton of a bison and the skull of a panther, the first of its kind discovered in Western Europe. Other bones must still be buried in the clay; as yet we have excavated only superficially." He indicated the leg bone of a ruminant which protruded from the soft clay. "This was a natural trap through which many an animal fell to its death."

"And now," he added, leading the way towards the gallery that continued the chamber, "we are approaching the sanctuary of the cavern. These lions guard the entrance."

He held his lamp to the wall. Cut in the soft stone were the outlines of two felines, fully six feet long, the body in profile but the face turned towards us, fixing us with fierce and menacing stare. Several yards beyond, the passage widened into a chamber.

"Wait here," we were told. Our guide crossed the wide room and lifted his lamp high in the air. Above his head a strange wild figure stood out sharp and black on its stone panel.

"This is the Spirit of the Hunt."

High on the wall, above countless drawings of animals, was throned an embodiment of them all—antlered head, lion's paws, horse's tail, and the feet and legs of a man—a shape still human in spite of its beast-like attributes. What did it represent? A sorcerer wearing a mask of ritual, or the hunt? The attitude of the figure, knees bent, body inclined, hands flexed on wrists, might well be characteristic of a primitive dance.

Modern primitive peoples assume masks for various purposes—for ceremonial dances to propitiate their totemic animal, and in rarer cases as a disguise, supplemented by the skin of a beast, to allow the hunter to approach more closely his prey. Thus the Bushmen of South Africa, hypothetical remnants of Paleolithic peoples, pursued the ostrich, and the Indians of our own Plains, the bison. Might not the Sorcerer of the *Trois Frères* represent the shaman of a hunter tribe in whom the habits and beliefs of his people were united and exalted? Or was he, as our host had suggested, a symbol of man's power over the lower animals—the very Spirit of the Hunt? The wall below swarmed with the figures of his victims—reindeer, horse, deer, and bison, bearing on their flanks the mark of club or arrow. Nor were the usual food animals alone represented. We had already seen the mutilated lion. Now we were shown the profile of a bear marked with a multitude of dots, as if stabbed or stoned, and blood streaming from mouth and nostrils.

A very ancient shrine, this. First had come the

Aurignacians who had cut in severe outline on the limestone walls of the cave the portraits of hairy mammoth and rhinoceros. Magdalenian artists had followed them; their painstaking workmanship was everywhere in evidence. And it was they who had given material form to the spirit of the shrine: they had placed the figure of the Sorcerer in its high niche.

"If you feel capable of a slight athletic feat, you can view the drawing at close range."

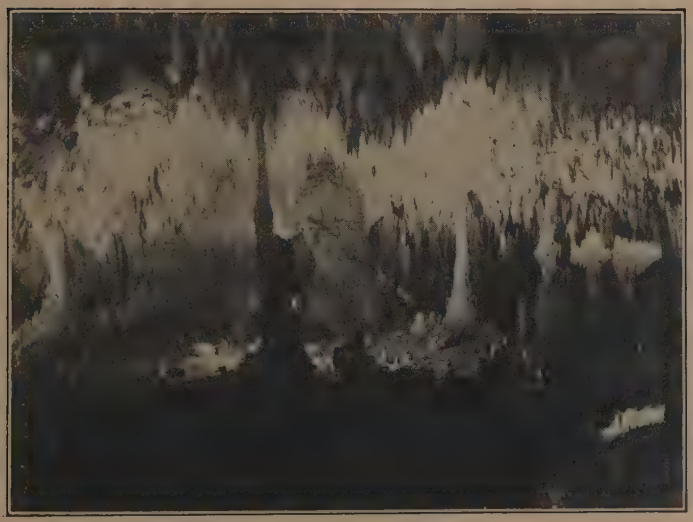
One by one we clambered up a narrow chimney which ended in a window-like opening three or four yards above the stalagmite floor of the chamber. "The Sorcerer," explained our guide, "is painted on the other face of this stone column at your right. If you swing about the column—there is a slight foothold on the farther side—and lean back against a sloping plane of rock, you will find yourself face to face with the drawing."

We followed his directions, not without difficulty, for the column was thick, the promised foothold only a few inches in breadth, and the consciousness of a hard rock floor several yards below made one clutch the smooth curve of the stone with a grip that made the muscles ache.

Perched in that precarious little niche, his back against the rock, a Magdalenian artist had worked with burin and brush. By the flare of a torch or the smoky flame of burning fat, he first engraved the outlines of the figure and the hair of beard, mane, and tail. Then he touched eyes, nose, and forehead with red, and in-

THE SORCERER OF THE TROIS FRÈRES

The actual figure stands half erect. After Breuil.



WITHIN THE TUC D'AUDOUBERT

Photograph by Max Bégouen.

dicated the muscles of back, belly, and legs with bands of black. Feet and toes, the human element, were finished with painstaking care.

What ceremonies took place in the chamber beneath him as he worked? What fantastic rites had witnessed and inspired the strange half-human creature on which we gazed uncomprehending after the night of centuries?

Again we stood in the chamber beneath the painting.

"There is still another passage." The speaker pointed to the left wall of the chamber, where, several yards above our heads, a wire had been stretched along the rock to the far black opening of an upper gallery.

"You will have to make your way from stalagmite to stalagmite." He indicated a series of projecting knobs along the wall. "And don't let go the wire!" he warned, with a glance of misgiving at our clay-coated sandals.

That brief passage along the wall, with only the wire between us and a twenty-foot drop, proved to be the most difficult of the afternoon. Not over ten yards in length, it took double that many minutes before the five of us had crossed in safety.

"I imagine that now you understand why we have had to close the caves of Montesquieu to all but specialists," our guide observed, as we paused to take breath in the entrance of the new gallery. "We have already had several accidents that narrowly missed being serious. The *Trois Frères* is manifestly not a cave for amateurs, and though the Tuc is not so difficult, there are portions of the cavern that threaten to collapse at any moment."

Advancing along the gallery, we stopped before two curious engravings cut on a projecting block of the vault—two bird-like figures with feathered body in profile and head turned so that both goggling eyes were visible.

"These we first took to be masks," explained our host, "but we have since identified them as drawings of the *harfang,* the white owl of the north. In this part of the cave the wall designs are very ancient."

Close at hand we were shown a series of engraved bisons—dozens of them, superimposed, one above the other, in a tangle of fine lines. Farther on we saw another proof of the presence of Aurignacians in the cavern—a panel of looped lines, curves, and arabesques, traced with a stick or finger tip in the soft clay coating of the rock, an enigmatical decoration which we were to see repeated in other Aurignacian caves.

"Here in the *Trois Frères* we have the entire scope of prehistoric art, from its birth to its highest point of realization," remarked the explorer of the cave, when, back again in the "sanctuary," we paused for a last look at the painting of the Sorcerer. "Though the cave is not large, we have already found several hundred engravings, and undoubtedly there are many more yet to be discovered."

And the joy of discovery was to be ours that day in the cavern of the *Trois Frères.* Leaving the chamber of the Sorcerer, we retraced our steps along the main gallery to a low passage which ended in a dome-shaped little room, the walls of which were coated with a thin

layer of dried clay which here and there had fallen in flakes, revealing a rock surface of gray marble, fine and smooth. Here our guide set down his lamp.

"If you look closely, you will notice that the stone has been scratched by flint. I would not be surprised if behind the coating of clay we might find other drawings, though no doubt worn by water."

Carefully we scanned the rock where the clay had peeled away.

"Here I believe is something." The artist of the Expedition held his lamp to a portion of the wall about a foot from the floor of the chamber.

"Where?" The wife of our host quickly knelt beside him.

"Look from the side, where the lamp casts a shadow, for the lines are very delicate. It looks like . . . it *is* the muzzle of a horse."

Eagerly the two set to work picking off the thin scale of clay, brushing away the dust that clogged the fine hair lines of the engraving with fingers and handkerchiefs dipped in a convenient pool.

Bit by bit the entire figure was uncovered—a little horse, not over ten inches long, with upstanding mane and lifted tail, a perfect example of Magdalenian art cut with cameo-like precision in marble smooth and polished as a lithographer's stone.

"The spirit of the cave is kind to you," remarked the owner of the *Trois Frères* as he rose to his feet after a careful inspection of the find. "This is as fine a piece of work as anything the cavern contains."

The artist brushed a last bit of dust from the little engraving.

"Yesterday, the little doe at the Mas," he mused. "To-day, the horse of the *Trois Frères*. It should be a good omen for the *Tuto Biouleto*."

CHAPTER IX

CAVERNS OF THE MOUNTAINS

WE stood at the steepest point of the mountain side and gazed at the opposite ridge. Everywhere in the gaunt, rust-stained limestone were holes—holes like cathedral doors, holes of intriguing irregularity, holes for giants, holes for badgers, and above all, holes for men. Twenty, forty, sixty we counted in one sweep of the opposite panel of cliffs, openings startlingly black after the green entrances of the Plantaurel.

Straight before us, up the waste of rocks before the largest cavity marched lines of electric-light poles. They led to Lombrive—Lombrive, known to every owner of a *Guide Bleu*—Lombrive, which is a mile and a quarter long with vast halls and corridors of stalactites, accessible to-day to tourists by means of railed stairways and electric lights. To those who avail themselves of the opportunity the guide narrates the story of five hundred Albigenses who walled themselves up in the cave with their bishop and starved to death—his moving translation of a few burials of the Neolithic and Bronze Ages.

Similar tombs have been found in the cave we had

just left behind us—the *Grotte des Églises,* with its great portal sending a cold silver light far into the lofty hall carpeted with stones and bordered by irregular hills of fallen rocks which bury deep the old Paleolithic hearths, perhaps for eternity. Painted on a far white wall, a little wild goat stood out, a tantalizing symbol of what lay beneath a hopeless weight of débris. In how many of the caverns on the other side of the valley was the story of man hidden in darkness beneath tons of stone?

In more than one; for in a land rich in game and natural habitations man must have dwelt early and late. We were now high above the River Ariège in the last foothills of the Pyrenees. Fields, though still struggling obstinately upward, no longer topped the summits; the heights were now to the rocks, the opposing walls pressed ever closer together. Through gaps in their sides ran mountain torrents, down from the glacial lakes beneath the frontier peaks, route for shepherds to their summer pastures and for smugglers to Spain.

Down in the valley, at the little *station thérmale* of Ussat-les-Bains, we found a train to take us the brief way to Tarascon, around which center several of the mountain caverns that have already yielded a portion of their secrets to the exploring prehistorian. Three miles above Tarascon the village of Bedeilhac sits high on hills afire with beeches or stark with gray summits of limestone.

In the shadow of the rock of Soudour we awaited

the guide to the cave of Bedeilhac. Three caverns pierce the hill, caverns famous in legend and literature for brigands and for bones of the great cave bear. An hour's climb from the town, Pradières opens near the mountain top its chambers marked with the magic red points of the Paleolithic hunter; half-way down the slope little Bouichèta has yielded traces of the Mousterian epoch so rare in the Pyrenees; near the bottom lies the cave of Bedeilhac, largest and loftiest of the three.

The guide to the cavern, a loquacious old peasant woman, led the way across the hillside, conversing volubly about the ways of excavators and foreigners—about the Monsieur who had dug at Bedeilhac every summer for twenty years, and about the English visitors against whom she cherished a deep grievance which we did not for the moment comprehend.

A few hundred yards and we stood before a monster of rock with a yawning mouth of green and violet. We passed in under a roof of jagged stalactites, skirting the trench of an old excavation with its accompanying heap of rejected animal bones, and continued our way through corridor after corridor, so vast that one felt the mountain must be entirely hollowed out. The bruising stones of the entrance floor soon changed to glistening yellow clay, and there was the drip, drip, of water, sometimes near, sometimes far off and eerie like a half-human cry. And everywhere hung stalactites, in all conceivable forms and degrees of solidity from pillar to lace.

The garrulity of our guide increased. With importance and authority she named each icy formation — "the baby's cradle," "the confessional," "the ham," "the elephant," and "the altar." It was then that she expanded her bitterness against the English who wished to see only scientific things and never looked at the *"choses jolies."* Out of tenderness for her feelings we restrained our interest in mural art until she had gone through her repertoire. It ended with "the organ," an isolated group of pipe-like stalactites in the center of a high chamber. From behind one of the stalactites she took down a long *galet* and with energetic pride struck at each pipe. At the ten different hollow tones there came into her dry face almost a glow of joy. This, even more than five francs, was her reward for braving with her little lamp the dark, spirit-infested cavern where few of her fellow villagers dared enter.

Then we asked to see the wall paintings. She led us back, past various points and lines of water-washed red, to the one distinguishable drawing of the main gallery. Low on the wall, painted in flat brown-black pigment, was the hindquarter of what must have once been a splendid bison. Ages of dripping water from the vault, still falling a few feet away, had effaced the rest of the animal, but beneath its belly ran a row of red spots of varying distinctness—magic sign or hunter's tally. And close at hand, on a column of stalagmite, we noticed several prints left by human hands, prints identical with those we had just seen in the cave of the *Trois Frères.*

Our next step was to find the excavations which have been carried on in superficial fashion at Bedeilhac

MAGDALENIAN BONE POLISHER AND JAVELIN POINTS FROM BEDEILHAC
Actual size.

for the past two decades. Here and there throughout the cave we saw a series of shallow pits, each with its scattering of bones and fragments of Neolithic

pottery. But in a far chamber we came upon a spot that seemed to promise something more interesting. Teeth and bones of bison, wild goat, and reindeer littered the floor. As one of us bent over to examine the animal fragments, her hand closed on a piece of bone, fashioned and slender, an unbroken polisher of possibly Magdalenian manufacture.

For an hour we dug, or rather scratched, for the archeological stratum stopped at a depth varying from one to five centimeters and below lay a surface of clay, dry, flaky, and apparently sterile. The cave floor was much as it had been when the last of the Paleolithic peoples trod it, thousands of years ago. Of the implements they had left behind we found fragments of a dozen javelin points, grooved at either side, and two tips of flat bone knife blades. Chips of flint were frequent, but we uncovered only a single tool—a combined scraper and graver similar to the ones we had discovered at the Mas d'Azil. Two pierced horse's teeth, fallen from a neckace, completed the collection.

* * *

"And now, Niaux," we decided, leaning in hungry weariness over the table in the little café where we had persuaded the proprietor to cook country ham for our belated lunch.

"Probably," suggested Paul, "it will be locked."

"Locked," we echoed, "not likely!" At the time of a previous visit in July we had seen the ruins of a grating which had been forced, according to rumor, by

a high state official too impatient to send down to the nearest village for a key.

We set out forthwith up the valley of Vicdessos for the cavern of Niaux. At the forge that faces the ascent to the cave, we went through the formality of asking for the key and a guide. To our discomfiture we learned that both existed—the key was in Tarascon and the guide, a district forester, absent on a tour of the high pine woods with a departmental inspector. There was nothing to do but make the best of the situation and spend the afternoon at another cavern.

Across the valley from Niaux the cave of the *Vache* opens on rocky pastures high above the river. Fifty yards from the entrance, we had been told erroneously, as we learned later, we would come upon the painting of an owl. With this in mind we began our crawl through a long, low gallery. Overhead, an irregular vault of red marble; and at either hand the walls retreated into the shadows beyond our path of light, giving us the disagreeable impression that we were creeping beneath a mountain suspended unnaturally in space. For two hundred yards we continued, turning lamp and candle upon every inch of wall space; but the only painting we discovered was that of an uncertain animal executed by some modern sceptic and labeled, "Find the bison, Cartailhac."

But it was not the few paintings—which consisted of several schematic drawings at the entrance, dating probably from the Bronze Age—that made the cave of the *Vache* important to our knowledge of prehistory.

There, sixty years ago, it was first proved that during the days of the vanished cave bear and reindeer, man, whose traces had been found in the rock shelters of Dordogne, inhabited also the heights of the Pyrenees. One of the early excavators of the cavern brought to the little museum at Foix, along with Magdalenian harpoons and carved bone, a group of curious objects, pierced and barbed, which were thought to be bone earrings worn by Paleolithic women. Twenty years later another interpretation was reached: the "earrings" of the *Vache* proved to be the first unrecognized examples of the characteristic Azilian harpoon.

Digging at the entrance of the cave, beneath a layer of kitchen refuse and fragments of pottery, we uncovered the same damp, snail-filled earth that marked our own excavations at the *Tuto Bioudeto*.

* * *

We had explored the *Vache* from end to end, and half of the long afternoon we had expected to spend at the cavern of Niaux still lay before us. Time to visit another cave of the high valley. But, looking across to the opposite cliff, pierced at that point with at least a score of openings, we asked each other, "Which?"

We sought the forge. Yes, the group of women and girls sewing before the doorway knew of a cave, not often visited, but "they had found things in it."

"What sort of things?" Paul asked.

"Pottery and um—teeth," came the universal peasant reply. Worked flints are just stones, worked

bone is just imagination, but pottery is in everyone's kitchen, and teeth, too, are an obvious possession.

Surely, the group queried, we were not thinking of going to the cave to-day? At half-past four? So near darkness? Well, if we were determined, we could walk on to the village of Niaux and ask anyone the way to the *Caugno Petito*.

By the path leading up from the village street we picked up an old man working in his garden who said he knew the cave. His eagerness to renew the acquaintance, however, was not manifest as he led the way up the quick rise which ended in a slide of stones and a vicious tangle of briers before the opening.

At the left of the entrance the surface was strewn with bones and teeth of wild horse and cattle and scraps of the eternal pottery.

"Bronze Age and Neolithic," we commented, "and no sign of serious excavating."

"But that's where a man once found a polished stone axe," our guide pointed with an enthusiasm worthy of the guardian of the Mas d'Azil.

The corridor we now entered was a great trench cut through two platforms of rock which mounted half-way to the high roof. The white walls, deeply incised by animal claws, showed not the slightest trace of human engraving, not the faintest spot of color. To right and left, galleries mounted into the dark. Only in a country of vast caverns could this have been christened *Caugno Petito,* "The Little Hole."

Following the left-hand gallery, we wandered

through a series of pleasant, habitable chambers which, with a gradual narrowing and lowering, brought us to our hands and knees before the final wall of the cave. The right-hand gallery was no such straight and simple matter. First came a scramble-and-haul climb up a cañon wall to a maze of chambers, in the midst of which something we had long suspected became evident: we were guiding our guide. Nevertheless, we continued and suddenly found ourselves in great gray halls of stalactite. From a mullioned roof so lofty that our high-held candle could barely define it, scores of bats whirred down. There was a murmur—more distant wings or rushing water? A long corridor led down an abrupt descent covered with broken stalactites and to the end—an end formed, as in the *Tuto Herido,* not by solid rock, but by tantalizing hard crystal.

Over the white walls was the usual litter of names, but here time—or clever forgery—have given them a certain charm: for almost without exception they were in the decorative handwriting of centuries ago. Here, in the graceful script of the seventeenth and eighteenth centuries, Monsieur le Marquis and Monsieur le Comte recorded their fashionable interest in Nature. There was even one valiant lady named Thérèse who dated her visit 1675.

During our return through the labyrinthian chambers and twisted corridors, the long-mounting respect of our old "guide" found voice.

"I see you know your business," he gasped as he followed Paul's sure, quick turns.

"Oh, we have the cave habit," Paul laughed, but when the black walls began to pale, we heard him breathe the faintest of relieved sighs.

It was deep twilight when we again struggled with rolling stones and tripping briers before the *Caugno Petito,* night as we descended the *route* to Tarascon. In the full moonlight the limestone cliffs gleamed like snow. Then came the hard, white valley road and the steel mills of the little city.

Tarascon of Ariège lifts the slender power of its chimneys which at night dominate the country. By day their rose-brown blends and fades against the color and light of the surrounding hills, but after dark they rise in black triumph over gray heights and shadowy sky. Between their bases, as we passed, the fire of an open-hearth burned towards us, bewildering and unreal. A man, slim and lithe, was silhouetted against it.

"It's an Arab!" The anthropologist added with delight this one more romantic detail.

"Yes," she was answered. "Most of them are—or Spanish or Poles, and being foreigners, hopelessly underpaid."

"There's no local French labor?"

"Oh, some, but they're almost as badly off; for the employer pretends to believe that in the country every man lives largely off his garden, so a 'living' wage need not be all that the name implies."

" 'We employ only girls who live at home,' " the anthropologist quoted.

We entered the town and saw across the Ariège—bordered, as at Foix, by the principal street—the isolated knoll of the Castella surmounted by a crucifix and the round tower of an old fortress overpowered by the size and brilliance of its clock. In the shadow below shone the lights of our hotel.

In weary shame we dragged our cave-stained garments and worn sandals across the bridge and into the shining splendor of the veranda restaurant, but one moment above stairs showed us that at best this was a sepulchre whited with one thin coat of paint. There was dust, there were shady sheets, and by the window of one bedroom, offering rest and a romantic view to the weary traveler, was a crippled dentist's chair.

As we went down to dinner, five Spaniards were descending from their ostentatious motor car and demanding trout. Although the Pyrenean season had closed, the proprietor had just started a sentence that was to have granted their request when his eye fell upon a uniformed figure advancing to meet Paul—the guide to Niaux who was also district forester.

"But, alas, it is impossible!" the landlord concluded loudly.

* * *

By seven in the morning we were once more mounting the valley to Niaux. The early air, bright and firm over gaunt rocks and clear, cold river, white road, and trees of flame, wiped all memory of yesterday's

effort from our muscles. Just beyond the forge we began our climb, a short, steep rise through the trees, then steeper and higher up the bare slope to the surmounting ridges. Midway we halted—up the valley, the ruined château of Miglos, a powder of towers in the sunlight; opposite, at our level, the two wide entrances of the *Vache;* and over the waste of stone and lavender above us, tier after tier of caves.

"Look up there." Our guide, the forester, pointed to the skyline of cliffs. Through a detached archway there was a glimpse of blue, then a black shadow into the mountain top. "Three thousand feet up, that cave," he went on. "But men used to live there just the same."

"You have found traces . . . ?"

"Bones, pottery, and teeth. I went up there with the Cave Man. You know him?" He was not unknown to us—a strange, almost legendary figure, half scientist, half fanatic, passing days in the caves of Ariège or more often whole nights, always seeking, frequently finding, and then passing on. Unjustly, but perhaps not unnaturally, he was best known in archeological circles not for his intrepidity but for the discovery in the bed of the Ariège of a skull of the tropical rhinoceros that left the Pyrenees at the end of Chellean days. There was something in the peculiar freshness of the bone of this particular beast, however, that suggested a more recent visitation, a quality that was later linked with the fact that over the river resided a military gentleman who, having served his country

MAGIC SIGNS PAINTED IN RED OCHRE, NIAUX

in her equatorial colonies, had retired to his native Pyrenees with a few souvenirs of his tropical sojourn. Wearying one morning of a particularly bulky and dust-collecting specimen, he—or his housekeeper—had hurled it from his study window, and the swift current had carried it down to the more enthusiastic than reflective Old Man of the Caves.

As we continued our climb to the Old Man's favorite haunt there loomed a great arched door at our right.

"Niaux?"

"No, that is the *Caugno Grande,* an immense gallery which probably communicated with the cave of Niaux ages ago. To-day the entrance is little more than a crack in the rock."

Hidden by the bushes, a mere crevice into which one slides for a moment's swift descent, the entrance to Niaux guards its great treasure. Once within, the opening grows high and wide, and there begins a series of white-walled corridors, thick underfoot with granular yellow loam swept in ages ago by water, extending for perhaps two hundred yards to the locked inner gate. Midway we came upon an excavation pit, the sides revealing at a few inches from the floor a layer with a dark line of Bronze Age pottery—practically the only archeological remains that the floor of Niaux has ever yielded. During the New Stone Age the cavern may well have been too humid for habitation, and the rare Paleolithic scrapers that have been found there indicate once more that the great shrines of the Old Age of Stone were not common dwellings.

The guide unlocked the gate, and we passed on between walls of red and gray marble, cut in facets by water. Before a block of gray stone low at the right the forester focused his lamp. Vaguely defined marks and spots of red were illumined, became a curious, purposed pattern. Dots single and in series, groups of parallel streaks had been made by fingers dipped in red ochre.

"I have figured it out," offered the guide, "that this is a map of the cave."

A map perhaps, but of something darker and more impenetrable than the cave of Niaux—the Magdalenian mind, to which as yet there is no certain key. The claviform sign we could recognize (the wooden club, or flint hafted to a stick); ponder on the little red hand with upward-pointing thumb and on the stylized representations of finger tips and palms. Hands and weapons of the hunters! But why?

We came to a horizontal row of seven red spots.

"Just seven steps farther on," observed the guide, "a gallery begins. One, two, three," placing his feet with precision, "four, five, six," still along the gray wall, "seven!" The sharp end of the rock, and a gallery opened in the darkness. "And here is another signpost." He moved on, his lamp searching the left wall. "Here."

Up the white surface a long red arrow mounted, its head directed towards a stalactite-streaked opening above, another gallery. Over the arrow lay a thin coating of stalagmite—this was no modern mark for

the direction of tourist or archeologist. To mark what obscure path had long vanished fingers traced it there? Guide to a secret shrine, or casual mark of one day's need?

We left the corridor behind and mounted a sandy waste like a black-roofed desert. A mountain of sand rose into the upper dark.

FISH INCISED IN CLAY, NIAUX

"That is the way to the Black Hall of the Bisons," the forester pointed, "but first of all I will take you to a part of the cave where large parties cannot go."

At the top of a hillock to the left the rock wall curved into a niche. Within a ring of recently placed pebbles, incised deep in the yellow earth, showed the outline of a trout. The eyes of Paul, sportsman and artist, gleamed with professional appreciation.

"What a beauty, a three-pounder, and what life! And here are the fins of a second, but no other trace."

MURAL PAINTING OF BISON IN BLACK, NIAUX

"No, but plenty of traces of the destroyer." A finger indicated numerous heel marks within the line of pebbles. "Think of how many similar engravings may have been trodden underfoot!"

In farther niches we saw other floor engravings—a miniature bison, a graceful little horse, the stylized representation of a hand, each within its ridiculously inadequate ring of pebbles which makes its survival a matter for conjecture—and prayer.

More corridors of marble, gray and red. A "lake" —ten square yards of water ending in a siphon.

The marble walls above the water bore several animal engravings, one of which the guide pointed out with pride.

"That is a pelican," he stated. "It is the only bird at Niaux." Patiently, politely, we held our candles at various heights and angles, striving to make out the contours of the strange fowl.

"It looks more like a bison," we objected. "See, he is climbing the wall like the little horse at *Le Portel*. There is his boss, and here the line of haunch and tail."

And now came the moment of approach to the sanctuary—the *Salon Noir,* the Black Hall of the Bisons. Skirting the mountain of sand, we felt again, as at Tuc d'Audoubert, the hushed excitement of drawing near to something supernatural, and vaguely hostile.

We were in the final chamber of the cavern. Light touched on the first edge of wall, and on the gleaming white background the black outlines of a bison leaped

out with startling freshness. For a moment we stood speechless before this image which, perfect beneath its ancient varnish of stalagmite, guarded by half a mile

MURAL PAINTING OF HORSE IN BLACK, NIAUX

of mountain wall from sun, wind, and rain, had lived on long ages after the hunter-artist and the game he sought with arrow and brush had vanished forever from the mountains.

Our artist pulled out his sketch block, eager to capture this life born of simplicity of line.

The guide laughed. "Don't be in too much of a hurry." His lamp moved a foot along the wall to a second bison, then swept its ray in a swinging semi-

MURAL PAINTING OF WILD GOAT IN BLACK, NIAUX

circle of the chamber. "You can take your choice. There are thirty more."

The path of light swarmed with beasts—little Celtic horses, wild goats, and a veritable herd of bisons. Drawn with a brush dipped in black oxide of manganese, the brilliant profiles fitted into each other, to each

vagary of the rock. There was no superposition of figures as in many a Paleolithic cave, but an economy of space which placed the long muzzle of a horse beneath a bison's belly, the horns of one goat following the line of another's back. Accidents of the rock had been utilized by the artist in the typical manner—antlers rising from a cavity roughly suggesting the head of an animal viewed in full face, legs and belly drawn in accord with a back formed by a curving fissure in the stone.

The beasts were of all scales, from a horse that measured nearly five feet to a miniature bison not over six inches long. This, then, was no carefully planned frieze executed by one artist or one group at the same period. But whatever the circumstances that led to the animal drawings at Niaux, there can be no doubt of the results—equally amazing for art and for reality. Wild goat, horns back and eyes wide with terror; bison, head down and tail raised, ready to charge, maddened by the arrow in his flesh—what skill guided the "primitive" hand that immortalized a second's vanishing motion?

The skill we can explain as a technical training whose details we shall never know, as a peculiar racial gift, as—convenient word that covers both our ignorance and our wonder—genius. And this genius was reinforced by the strongest of motives, religion and the search for food, so closely interrelated in men whose lives are entirely dependent upon nature that they become one impulse and one need.

Caverns of the Mountains

Perhaps the most striking proof of the enduring power of the animals of Niaux is this: for two hundred years the adventurous and the curious who have penetrated the long half mile of darkness to the *Salon Noir* have recorded the fact here and there upon the walls, but unlike the caves of Marsoulas and the Mas d'Azil, not one flank of horse or bison is marred by date or initial, not one head effaced by *graffiti.*

Back to the day the image of the bisons accompanied us, but out in the sunlight they vanished before another vision. For once again we faced the limestone ridge with its multitude of openings into the mysteries of buried life. And stronger upon us than the sense of what they had already revealed was the pregnant suggestion of all that the mountains still withheld in their black depths and on their wild heights.

CHAPTER X

FÊTES AND EXPLORATIONS

SEPTEMBER is a time of color and movement in the foothills. Green-gold patches of corn and rusty vineyards rise to the farmhouses that dot the ridge with their poplars and nestling haycocks; hounds bay on the hillsides; shots pursue the rising partridge above the plateau; on the road past the Catine a steady noontime procession of women balance on kerchiefed heads the broad baskets under whose linen covers lie heaps of precious mushrooms. And everywhere throughout the countryside there is a stir and bustle of preparation for the yearly fête. For during the interval between the early harvest and the vintage comes the great day of each village—nominally the feast of its patron saint, actually three full days of eating, drinking, and dancing for old and young.

For weeks beforehand housewives hoard the precious eggs for *crêmes* and *croustades*. Sons and daughters come home, from Toulouse, Marseille, or even far-away Paris, crowding the autobus with their wives, husbands, children, shotguns, and long-eared hunting dogs.

One by one the festivals slipped by village after village, in a long series of Sundays that the whole district

might take part in each celebration. Fabas, high over the valley, began; Ste. Croix, the county seat, followed with bicycle races and fireworks; then came the turn of Mérigon; and last of all, Montardit.

A demoralizing period for work of any sort. Even our steady Jean-Marie lost for a time something of his enthusiasm for science. And yet Jean-Marie was already well on the way towards becoming a serious archeologist. The first step had been taken on the day when we were not impressed by the box for the holy oils. Jean-Marie set out to know what we were looking for and why we were looking for it. Undoubtedly the primary reason for his zeal was to expound his superior wisdom to the village—Jean-Marie was a shy young man, but he had his dignity. So when the sabot-maker, the postmaster's son, and the mayor's sister, after respectful greeting and more respectful silence on the threshold of the Violet Hole, descended into the trench to tease Jean-Marie in patois, we heard, and Paul understood, a great deal of scientific statement in a tongue more rich in color than in technical terms.

Later came the days when Jean-Marie, very red and uncertain, handed over bits of flint with a word of scientific comment such as "Retouched" or "Traces of use." And then he went with us to excavate the Magdalenian hearth at the Mas d'Azil. There he met the guardian who hunted for the polished stone axe and the collar of gold with a quarry pick, running it through any incidental engraved disks that strewed his path

but gathering up all flint chips to sell as "tools of the Stone Age" to tourists as credulous as he. Jean-Marie came home a different man. He had seen a workman, and there could be no doubt that he himself was, in his small way, an archeologist. Now he was accustomed to reject even an occasional well-worked graver with a sceptical "It's only a chip!" For he was rapidly acquiring the scientific attitude—that everything is nothing until proved.

But it was not only the scientific cynicism that sat so strangely in his beautiful bovine eye that marked the growth of Jean-Marie's archeological education; more than that it was the awakening of his imagination and enthusiasm. Every morning when we arrived at Montardit at half-past seven, Jean-Marie, his troubled father would inform us, was already "up there," and when we descended at five, we left him passing earth through one of our discarded sieves. Moreover, he was carrying on a steady and painstaking exploration of all possible crevices or depressions in the cave that might lead to . . . anything. This search for the "North-west Passage" became the passion of his life. Jean-Marie was not paid by the hour.

Perhaps this passion was not entirely pure. It may have been in some degree connected with the paternal system of working for his father for food but no money against which Jean-Marie with an income protested by no longer descending from the cave to cobble until dark. Perhaps too it may have been a silent revolt against the continued laud of his younger

MUSHROOM GATHERERS

A VENDOR OF CREAM CHEESE

FALL PLOWING IN THE PYRENEES

Photograph by Max Bégouen.

brother. Of this aspect we were to observe more when, in mid-September, Augustin came home for the fête of Montardit.

We were to be the guests of Jacquelard. Music quick and gay greeted us far down the road on the morning of the fête, and as we made the swift turn before the village, we came suddenly upon a half-dozen couples dancing in front of 'Phine's. They were young, the girls in dark dresses and big hats, the boys in new suits and caps. One youngster, however, dancing with excessive energy and fair skill, wore on the back of his head an ostentatious straw hat.

"That is My Brother," capitalized the small Simone, who stood with the spectators before the post office, her satisfaction in her new gray dress almost completely eclipsed by the pride of possessing anything so smart as Augustin the waiter.

And in truth there was something distinctly impressive about Augustin's late entrance to the family feast, his easy, pleasant patronage of his father's guests, and the really dazzling accompaniment of tinware—the initialed belt buckle, the generous cigarette case, and above all the cigarette lighter which brought forth universal admiration and, occasionally, a flame.

There was nothing vainglorious about Jean-Marie. Quiet excellence was the keynote of his appearance, his dark suit the only well-cut one in the village, the shirt with a neat stripe, new shoes, new cap, all carried with a sense of rightness on his fine, strong body which ten weeks of digging had rendered elegantly slim.

"Yes, I selected it for him." Augustin received our appreciation of Jean-Marie's costume, and his parents beamed their pride.

"Oh, you — you — you — " muttered Jean-Marie fiercely.

Throughout the dinner Augustin expanded on the subject of his American-conferred tips and explained the fête in terms of his achievement. The food he left scornfully to his mother. But it was a banquet that she had prepared, not the heavy, hearty company dinner of the New England farm—the table groaning under the simultaneous weight of the predominant roast and potatoes, flanked by four other vegetables and six kinds of pickles and preserves, accompanied by cups of coffee and sugar and milk, and followed by every imagined variety of pie and cake, with ice cream rich with dozens of eggs and "solid cream." Here in this hill village, still ten miles from a railroad, the savory *hors d'œuvres,* the garnished cold roast of beef, the *ragout* and broiled chickens, and the salad, each appeared in a long series of changing plates. After the cheese and the compote of pears came the *crême,* a thin golden lake of custard, and the *croustades,* crusty pear tarts which flavor every fête, the fruit, and the three-hours feast ended with black coffee and *eau-de-vie.* Except for the preponderance of meat courses —the true mark of prosperity and festivity among a people who eat "the soup" twice a day throughout the year—the menu bore the stamp of long tradition of seigniorial hospitality.

Madame Jacquelard, the kerchief removed to-day from her quick, graceful head, served us with an efficiency that made the small shop-kitchen spacious. For the fête is a holiday for the men and the guests. To the women of the household it is so much additional toil—hours of serving with occasional scraps eaten standing, after the everyday custom of a country where the woman does not sit at table with the Man.

MARKET DAY

With the custards and the cakes the sharp red wine of the country disappeared and the champagne arrived. Paul, to whom the honor of opening the bottle had been offered, passed it over to Augustin with the suggestion that he was putting it into professional hands. Once again the family murmured pleasantly, once again Jean-Marie muttered darkly. But not for long. For now there arrived for him perhaps the most gala moment of the fête. Augustin broke the cork.

By three o'clock the dinners begun at eleven were drawing to a close. Again the rasp of the band began before 'Phine's door and came on down the road. Dancing before them, half a dozen youngsters of whom Augustin was the indisputable center bore aloft the musicians' chairs. Behind them straggled other youths, the girls in twos and threes, and the children, followed by their elders. Up the road from Jacquelard's house a gently rolling little meadow had become overnight a dancing ground. By the highway, two pine trees blossoming in rose and blue and gold formed a gate—set up and decorated in the manner of peasant weddings—and within, Japanese lanterns circled the field. A bower of pine boughs covered the musicians' central platform. Benches for the spectators stood on the meadow's rise, and by the road were booths for toys, candy, pastry, and confetti which soon possessed a year's supply of Simone's hoarded sous.

Above the green field with its rosy lanterns and flying confetti, above the red roof of the schoolhouse and the roadside poplars, rose swift and sheer the hill of Montardit, silver piercing spire, rosy-purple tiles, creamy crumbling walls, warmer yellow of haycocks and byres, all with the soft, tenderly faded colors of an early autumn sun.

Madame Jacquelard's eyes followed ours. "I shall never forget the fêtes before the war," she said. "Then Monsieur and Madame from the manor of Ste. Croix used to sing the mass in the church up there." She named two of France's greatest opera singers. "It was

wonderful. They sang so loud that you could hear them in Mérigon!"

The music started again, and with it the dancing. That is, four couples, the same that we had seen in front of the inn, moved about on the uneven ground in an ungainly, unhappy attempt at modern ballroom dancing. It all seemed so dead, this, in place of the country dances for which the meadow was made, coif and blouse replaced not by bright summer frocks but by dark cloth dresses. The son of our farmer passed, a romantic young lord of his domain when one came upon him ploughing the hillside field—red sash, wide trousers of brown corduroy, slim bare ankles above his sabots; now, in the suit made by the village tailor he had taken on a hangdog air which left one conscious of nothing but the hitherto unsuspected size of his ears. On his arm hung a girl bunched into a thick gray dress.

"He is speaking with her," remarked Madame Jacquelard in the local phraseology for a young man's serious intentions. On the next day, at the celebration of the Forest, all such gentlemen would slip away with their sweethearts into the woods, one old custom—Paleolithic—whose appeal fireworks and foxtrots cannot efface. And the "conversation" would continue, culminating in marriage shortly before the baptism of the baby.

From the nods and nudges with which Jacquelard was visiting his sons, it became clear to us that we were about to be asked to dance.

"But can't everybody," we suggested desperately, "dance a quadrille?"

More negotiating between Jacquelard and his sons, between Augustin and the musicians, and we found ourselves in a group of a dozen couples, tearing around at a breakneck pace to the exigencies of *tempo allegro* and a field full of rabbit holes. It was jolly for everybody, however, except perhaps for the chosen young ladies of Jean-Marie and Augustin, and even they found a certain solace in a vicious pelting of confetti that specialized with noticeable persistence in the area of the lady foreigners.

"How rustic!" A metropolitan gentleman in a black velours hat gave us the appreciative comment of a man who, once a simple son of Montardit, had risen to the eminence of waiter in a Paris café.

"He says that perhaps he can get me a job," whispered Augustin, humble at last.

We released him and Jean-Marie to their waiting damsels. Jean-Marie sought at once a certain solid little shepherdess in a black suit and a white lamb's-wool scarf, and Augustin, after one rather painful foxtrot with the anthropologist to prove that he could have a swell rich American girl when he wanted to, returned to his capers with a merry, jealous little peasant girl on each arm.

It is to be hoped that the flash of his personality, his jewels, and his profession did not finally lure the sweetheart of his more serious brother, but whatever the cause, next morning we were followed to the Violet

Hole by the dragging feet of a young archeologist who had no heart in his work.

* * *

Our own enthusiasm at this point was not of the highest. Days of meager digging made us remember with regret and a certain degree of envy the facility of sites such as Bedeilhac and the rich culture layers of *Le Portel* and the Mas. After a few hours of sifting one of us would desert and descending into the trench, scratch in the depression at the right, the *"trou de la vipère"* still rich in animal bones; or scan each fall of Jean-Marie's pick in the hope of unearthing—anything.

The pit itself now contained but few bones; a tooth was a triumph. But two things never failed—snails and cinders, the former still encouraging the hope that this was still the mysterious Azilian period; the hearth, the certainty of man's continued presence in the *Tuto Bioulеto*. We evolved new theories as to the probable occupation of the cave: it was not a regular habitation, but a rendezvous for hunters, where they spent the night, built fires, but did little cooking; or, this was a period of famine, and the myriad snails represented the principal food supply. The continued presence of flint chips furnished an argument against the *rendez-vous-de-chasse* theory, for it seemed improbable that extensive flint-cutting would have been carried on in a spot that served only for an occasional lodging.

"Come down here. There is something interesting at last." The voice of the artist called from the trench

where he had descended to aid Jean-Marie in removing an accumulation of stones. Abandoning our sieves, we hastened to join the speaker, who stood facing the back wall of the cave, beside a suddenly revivified Jean-Marie. Imbedded in the earth along the wall lay several large fragments of rock.

"Put your hand in here." Paul indicated a crevice between two gray blocks.

The anthropologist thrust her fingers, then her arm, through the chink.

"There's a space behind!" she exclaimed. Our companion nodded.

"It looks as if it had been closed intentionally, as if at some time during the Stone Age they decided to block an opening for reasons of their own. And that opening leads somewhere."

Jean-Marie's eyes grew bright. At last, the Northwest Passage! He reached for a crowbar.

But not yet, we were obliged to tell him. Unless we reduced the level of the earth about the hole, it risked being choked by a landslide fatal to any reconstruction of the past. Weariness settled once more on the overfêted Jean-Marie, but we climbed back to our sieves with renewed eagerness.

As we worked, speculations flew about. Were we at the entrance of a painted gallery or a passage that would prove the connecting corridor between the series of rock shelters? We sifted eagerly now, for each handful brought us nearer the answer. Within the sieves themselves things began to look up a bit. There

was a slight increase in animal bones, a worked flint or two, and at last a delicate point of bone, finely tapering, a perforator used perhaps in the preparation of clothing.

The following day brought to light something infinitely more valuable for dating the civilization that had left the culture layer in which we were then working. We found two little flint tools, scrapers not over two inches in length—thick little planes retouched

AZILIAN FLINT SCRAPERS FROM THE VIOLET HOLE
Actual size.

about their stubby beaks. One red, one smoky white, they seemed more like ornaments than tools for cleaning hide or scraping bone. The flint-working, as compared with the finely retouched Magdalenian tools from the Mas d'Azil, seemed crude indeed, but this degeneration of technique, together with their peculiar thick form and small size, helped to identify the implements. They were characteristic Azilian tools.

We found the scrapers on Friday. On Monday long-laid plans were to carry us on a tour of the pre-

historic caves and shelters of the Garonne valley—Marsoulas, Tarté, Gourdan, Gargas, then on to Dordogne and the newly discovered cavern of David in the Department of Lot. Only Saturday remained to probe the mysteries of the Violet Hole. And on Saturday morning Jean-Marie met us with, "Someone told me last night about a bottomless pit at Contrazy."

Again the call of underground adventure, irresistible to prehistorians as the lure of the unscaled peak to the alpinist and the unknown jungle to the explorer of the tropics.

Equipped with fifty feet of rope and an acetylene lamp, we set off, all four, for the chestnut woods of Contrazy, a mile away across the valley from the *Tuto Bioudeto*. We found the mouth of the "bottomless" pit ugly enough to make anyone share the popular belief in its limitless possibilities for evil. Across the opening, shepherds had long ago flung rocks to save their most adventurous charges, thus forming a crude, unsteady vaulting now overgrown with moss. Out of the fissures crept an odor of damp, imprisoned earth and rock, the familiar cave smell. We went through the usual business of dropping stones. Their first ominous *boom—boom* preluded an instant of silence; then we heard a tiny rustle like a distant echo, or as if something had stirred far, far below.

At first glance no crevice in the stone vaulting seemed wide enough to crawl through. But once we had pulled up a little tree that had grown among the rocks and removed the stones about its roots, we uncovered an

entry large enough to admit the body of our most determined explorer, "providing," he announced, "I keep my arms up over my head."

Suiting his action to the words and attached to the end of our cable wound about a tree and held by Jean-Marie and another stalwart peasant, Paul slid out of sight through the fissure. An instant later we had lost the gleam of his lamp, but his voice called back, reassuringly.

"Lower ahead. There is just enough slant so that I can get a foothold."

At a depth of nearly fifty feet—the length of the rope—his voice rose again.

"I am on a little ledge just big enough for two, but nowhere near the bottom. Send down Jean-Marie; he can lower me the length of the rope again."

Jean-Marie obeyed with enthusiasm. There were unpleasant moments when his difficult entry seemed about to shake down the vault on the heads of the two explorers. Then their voices rose from the ledge, Paul's dying out gradually as he continued the descent.

"He is at the end of the rope," Jean-Marie relayed. "Below him he can see the bottom. He thinks there is a gallery that goes off towards the river."

"How far to the bottom?"

"About twenty feet."

There was a moment of silence; then, "He has decided not to jump down," announced Jean-Marie.

Paul's voice came into hearing again as he rejoined his companion on the ledge. After a minute's delay

while we angled for the cable with a weighted cord, we hauled up first one, then the other, and the Expedition set off for lunch, vowing next time to bring a longer rope.

* * *

Contrazy was a distinctly masculine exploit. The following day the two members of the Expedition who had taken no real part in the exploration of the "bottomless pit" resolved to make another examination of the cave-pierced hillside above Mérigon. There was the little cavern near the *Tuto Herido* where we had found a firestone and a medieval spindle whorl, which might well reserve other surprises; there was also a row of holes near the summit of the cliff which from the road below had every appearance of rock shelters.

Crossing the Volp, we climbed through the tangle of thorns and scrub oak to the top of the ridge. Below us, too buried in bushes to be seen, the stream cut between our height and the rock of Mérigon with its ruined tower. To the right the slope fell away in a sheer drop of bare limestone to the river bed. Streamers of ivy falling over the face of the cliff veiled the line of supposed shelters.

Leaving the anthropologist near the rocky summit, her companion moved cautiously forward, seeking a careful foothold on the smooth rock surface.

"Better stay where you are," she called back. "I can just make it, and there is no room for two."

A branch cracked under foot; stone dust fell in powdery showers. It was still on the hillside. Then—

"I have found the shelters," came disappointed tones, "but they are only big enough for badgers. And some animal has made itself a bed, or rather three little round beds of dried moss."

"Then come back here, for I have found a cave."

"Where?"

"I sat down beside it!" The anthropologist flopped flat, gave a shove forward, and half disappeared into the rock.

"I've crawled inside as far as I can," she went on, backing out. "The tunnel falls away to what looks like a high gallery full of candles. Only there is a rise of earth which almost meets the vault, so I could not see whether the passage drops like a well to the gallery or whether the slope is gradual. But I think I can dig out a path in front of me by passing you the stones. Hold my ankles and push."

Lamp in hand, she disappeared in the tunnel. In a few minutes the passage had been cleared of a considerable accumulation of stones and earth.

"It slopes continually; it is not a drop," she called at last. "We can slide down. But it is still too steep to go head first. We will have to back in."

At that moment we were joined by the artist, who had been watching operations from the road below. Straightway we made ready for the descent. A hasty reconnoiter with the feet, a few vigorous shoves of elbows, head flat on arms at the lowest spot, and down we shot. Two body-lengths and we sat up, then stood upright. The light of our lamps fell on hundreds of

tapers—slender white fingers of stalagmite in rows and clusters pointing upwards to right and left, and across the corridor great single candles, not one broken by human passage.

We crept down with the utmost care, fearful of breaking the stony needles that rose among the larger shafts. The walls of the gallery were white, unmarked by brush or burin. But we were too near the entrance for mural art. We would go on and find . . . a sudden white door. Paul struck it with his pick. No reverberation.

"It would take a blast of dynamite to break through."

We had passed a branching gallery to our left as we advanced. Back we went, swinging ourselves up to its level—about five feet above the principal gallery. Beneath our grasp the rock surface was suddenly smooth, perhaps polished and worn by far generations of human hands. We arrived in a narrow passage; to the left, a low round chamber, and twenty feet ahead, another implacable barrier. But that was not all. Trapped in the stalagmite covering of the floor lay the split leg bone of an animal. The paleontologist bent to examine it.

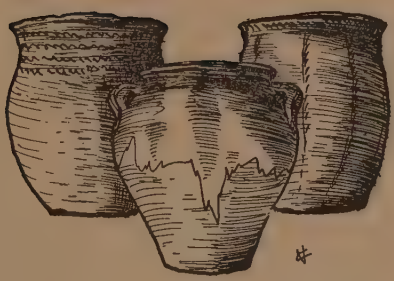
"The humerus of a big deer," she stated, "split to extract the marrow. Kitchen refuse, perhaps a hearth. The cave was inhabited."

The low round chamber disclosed still other surprises: split bones and teeth of deer, bison, wild goat, and in an angle of the rock wall the fossilized skull of

a bear. Close beside it lay a heavy hammerstone—someone had crushed the skull to remove the precious teeth. How many hundreds of centuries ago? We could not know until we had broken through the carpet of stalagmite, the inviolate seal of stone that lay between that far-away civilization and our own.

Another prehistoric site to excavate!

But first of all we must dig the Violet Hole to the end.



CHAPTER XI

CAVES OF THE GARONNE

AT St. Girons, twelve miles beyond Montardit, the Salat is still a torrent, shallow and swift, sliding over stretches of pebbly bottom or dropping into trout pools beloved of the local "pescophile." But by the time it has passed under the bridges of the *sous-préfecture* and through the sluices of the paper factories, it has lost its mountain blue. Below the rock of St. Lizier, with its clustered gypsy wagons and drying gypsy petticoats like round red parasols in the sun, it is already a river of the plain—staid, oily, and green, flowing silently along the valley floor between a double row of poplars.

Two prehistoric caves drew us that September morning into the valley of the Salat—Marsoulas with its painted bisons, and Tarté, the site that yielded the famous Tarté scrapers, a type of tool well known to specialists in the flint industry of the Aurignacian period. It was a crisp mountain morning, with the peaks of the Castillonnais swimming in haze and the poplar trees along the river shaking brassy leaves against a sky incredibly blue.

Back at St. Girons they were holding the monthly

fair. A long procession lined the highway—rattling two-wheeled carts drawn by brisk Tarascon ponies; oxen, two by two, with their slow, rhythmic pace; unruly little *braus;* plump pigs driven by barefoot urchins wearing their "city" shoes dangling by the laces about their sunburnt necks.

We passed Montgauch and its Roman ruins, Castagnède with its chestnut woods, and came at last to the little spa of Salies-du-Salat nestled beneath its plane trees under the ruined walls of an old stronghold of the Counts of Comminges.

We left our wheels at one of the hotels. The *garçon* who stowed them away expressed great interest on learning that we were on our way to Tarté.

"I am something of an archeologist myself," he told us. "Every Saturday afternoon I go up to the cave to help the *Anglais* who is excavating it. He has a hard time getting workmen during the season of the vintage."

A few hundred yards above the town a cowpath bordered with blackberry bushes brought us to the prosperous-looking farmhouse of the owner of the cavern, a shrewd peasant who, according to rumor, has learned to translate the enthusiasm of archeologists, if not into gold, at least into a substantial amount of Government paper. At the house we were told that we would find the *Anglais* down at the cave. We saw his low green car parked between the pig's soupkettle and the winepress, while a dozen hens picked with easy familiarity among the tires.

Crossing a stony pasture, we arrived at the upper rim of a narrow valley with steep, cliff-like sides hidden beneath a dense growth of underbrush and a strip of meadow flowing like a flat green river between. There was no sign of a cave. The renown of Tarté had made us expect an impressive entrance; we peered vainly here and there among the trees.

"Listen!" Paul held up a warning hand. A faint little sound, delicate, repeated, filtered up to us through the underbrush. A muffled tapping: *toc-toc-toc*. And then again, *toc-toc-toc*.

"It comes from just below."

We plunged resolutely into the thorns. There was indeed a path, short and steep, circling perilously near an unexpected opening in the cliff and ending abruptly at a door of new planks. *"Piège à loups"* [wolf trap]; read a sign. Impressive barbed-wire entanglements stretched to left and right. Craning our necks, we looked down through the opening. Several yards below us, under a substantial wire grating, a respectable English gentleman in blue denim was seated on a rock pile breaking stone.

The general disposition of the cave of Tarté seemed very like that of our own *Tuto Bioudeto*—a large, light, central chamber and two trench-like galleries uncovered during the excavations. And, as in the case of the Montardit site, the upper archeological layers had been removed by peasants of the neighborhood, who thought that the ashes of prehistoric hearths could be used as fertilizer for their fields. But there the analogy

ended. For Tarté, in spite of its relatively small size, contained culture deposits far richer than any we had yet discovered. It has been excavated and reëxcavated; and yet several months before our visit a local archeologist after three weeks of digging in an untouched layer had discovered no less than two thousand flint and bone implements of Aurignacian pattern. The Englishman whom we found at work in the excavations told us that he too had uncovered a gratifying number of specimens.

"But digging at Tarté is no child's play." He indicated the block of breccia he was attacking with chisel and mallet. "It takes a practiced hand to extract flint tools from the stony mass that composes the archeological layers. As for bone implements," he paused with an expressive smile, "a good many from Tarté and elsewhere have probably been lost to science. Excavators are always talking about taking out bone needles intact from a block of solid limestone, but I dare say there are very few needles not broken once or twice in the process! Flints of course are another matter."

Our English colleague showed us a series of Tarté scrapers, thick little planes with rounded beaks, which, though typical Aurignacian tools, bore an astonishing resemblance to our miniature Azilian scrapers from Montardit. We lingered for an hour in the airy rock chamber littered with flint fragments from the Aurignacian workshop and stone chips and splinters of bone from the excavator's tool; then, taking our leave of the

patient worker on his rock pile, we followed the path along the face of the cliff towards a second cavern cut in the steep north slope of the narrow valley.

We had scarcely passed out of hearing of the *clink-clink* of the Englishman's chisel when we stood before the entrance of the cave of Marsoulas. An impressive iron grating had been set in the rock, but it stood hospitably open—a convenient arrangement, we had been told at Salies, so that the peasant proprietor might not be disturbed from his work by tourists desiring to visit the cavern.

Lighting our candles, we made our way past the grating into the single gallery composing the cave. It was a straight passage, a little over fifty yards long, formed by an ancient landslide which had left a sheet of rock tilted against the perpendicular wall of the cliff—a three-sided corridor in which the right wall and the vault were represented by a single inclined plane of gray stone.

"It is probably the safest cave we have yet visited," one of us remarked with an apprehensive glance at the slanting rock at our right, "but it gives the unpleasant impression of being about to fall in on our heads."

According to the official report on the cave of Marsoulas, the vault at either end of the passage is solid, but the whole middle section "may be expected to collapse at any moment." Blocks of stone lay about the dry clay floor, fragments of a landslide that had choked the entrance to the cavern so that no one came

to Marsoulas after the Magdalenians abandoned it—a happy accident which protected the painted walls through hundreds of centuries.

"Too bad another landslide could not have protected the cave for the past fifty years!" We stood before a smooth rock panel which showed traces of color, red, yellow, and black, but all evidence of line and form had disappeared under a network of dates, signatures, and initials with which the wall was covered.

"It's a crying shame," the speaker continued, "though one can't entirely blame the peasants for neglecting to notice the color on the rock when you remember that archeologists themselves came here for twenty years before observing a single painting or engraving."

Weather and man's carelessness have indeed worked sad havoc with the painted bisons of Marsoulas. It took more than a passing glance to decipher the contours of five animals that form the celebrated central panel painted on the perpendicular left wall of the cavern. The dominating figure was that of a big bison, colored red and outlined in black—a spirited shape with a wicked little red eye which stands out startlingly vivid against the faded tint of the rest of the fresco. The panel had evidently been painted twice. A series of lines, though considerably effaced, were nevertheless clearly visible behind the painted bison. Clearer still the outlines of a bull showed black beneath the red body of a horse.

"And here is the work of the first impressionists!"

Beyond the first figures two additional bisons were represented, one behind the other as if in an attempt at perspective. The heads of both figures had been carefully engraved, then painted in flat tint—a red-

ENGRAVED AND PAINTED HALF FIGURE OF A BISON, MARSOULAS
After Breuil.

dish brown. But the neck and shoulders of one and the body of the other were formed by a succession of red dots arranged in a regular series of lines and curves.

"If these had only been preserved, they would probably form the best examples of polychrome paintings

found in France. But as it is. . . ." Our artist shook his head, regretfully considering the smears and scratches that marred the surface of the panel.

As we penetrated deeper into the passage, it shrank in size until at last we were forced to crawl one by one, scraping backs and shoulders against the jagged face of the oblique wall. To our left the rock revealed a tangle of incised lines. We made out the figures of several animals—horses, bison, a deer, a wild goat, and fragmentary drawings of heads and limbs. Some of them were sketched in a single firm outline; others were drawn in a series of broken strokes, to indicate the hairy coat of the animal represented. We found three caricatured human faces which, like those we had already seen at *Le Portel,* appeared to be intentional grotesques—masks for a Magdalenian ritual. Even their position at the rear of the gallery had not preserved the engravings from the vandalism of modern visitors. A multitude of scratches rendered the tangled lines even less decipherable; one little horse, perhaps the finest work of all, had been recently retraced with the point of a penknife.

"Fortunately for the archeologists of the future, all the engravings and paintings of Marsoulas have been carefully copied," Paul remarked as we returned to the entrance of the cave. "If we come back in a year or two from now, there will probably be nothing left for us to see."

"I don't want to come back." The anthropologist spoke with decision. "From now on I prefer to read

about Marsoulas in a book. I feel as if I never wanted to see it again."

"Nor I," murmured the third member of the Expedition, glancing back at the shallow corridor, flooded throughout half its length with the yellow glow of the September sun. The artist did not speak, but as we turned away from the mutilated cavern, he closed the iron grating carefully behind him, as if it were indeed the doorway of a tomb.

* * *

A few miles below Salies-du-Salat stretch the wooded heights and fertile plains of the Garonne valley, a favorite abode of man ever since the first migrations brought him north and west into the continent of Europe. The morning following our visit to Tarté and Marsoulas we left the train at the station of Montréjeau and set off across the river fields towards the high rock of Gourdan, one of the famous prehistoric sites of the Garonne region. It was nearly seven o'clock. The meadows glistened with hoarfrost. A torrent of mist streamed above the river, swirling through gold chestnut leaves and red-brown beeches. Our path lay along the cliff bordering the current. We followed it for several hundred yards, scanning the face of the rock for the opening of the shelter.

There are several caves at Gourdan, but the most important is the so-called "walled" grotto, located at the very summit of the rock above an almost perpendicular slope of clay. Its archeological layers (thirty-

six feet deep from top to bottom) yielded implements of four civilizations—Azilian, Magdalenian, Aurignacian, and Mousterian—and furnished many of the carved bone tools and ornaments of the Piette collection in the Museum of St. Germain-en-Laye.

To-day Gourdan is a dismantled site. We found it a melancholy jumble of broken rocks and heaped débris from the excavations. Here and there the walls showed traces of blasting. It was evident that the work of excavating had been carried on with painstaking care. Not a stone had been left unturned; not an angle remained where the tool of the archeologist had not penetrated. We searched in vain for a patch, ever so tiny, of virgin soil. And yet someone had told us that a school-teacher of the district had found six Magdalenian harpoons in a forgotten corner a few months before our visit. After all, why not we?

"Stick to the *éboulis*, the rubbish," a friend had counseled. "That will be your only chance of finding an untouched area."

At first glance the entire floor of the shelter, a space about fifty feet square, with its huge rocks teetering on the brink of moss-grown holes, looked like one immense *éboulis*.

"As if the entire roof had fallen in," according to the artist, who investigated dark cavities and ventured under perilously poised rocks, to reap only a meager harvest of horses' teeth and formless flint chips. Chips there were in plenty. They fell tinkling at every stroke of the tool. Lured on by thoughts of Mag-

dalenian harpoons, the anthropologist lighted her candle and attacked a bank of sand and clay she had discovered in a low rock chamber at the left of the entrance. At any other moment she would probably have asked herself why only *half* of the sand bank had been removed by the excavators; but as it was she was content to find a layer of charcoal and carbonized bones a few inches from the surface of the bank, and squatting on her heels under the low vault, she set resolutely to work. The osteologist, after scratching without any real conviction among the rocks, climbed to a broad ledge and stretched herself out in the sun, meditating meanwhile that doubtless many a prehistoric predecessor of hers had basked there in the morning warmth while looking down on a pleasant vista of red-brown hills and gleaming river.

Dozing in the soft light, she roused herself from time to time to speak words of comfort to the anthropologist, who appeared covered with sand and candle grease to ask for a match, stating gloomily that the hearth had dwindled from six inches in depth to a possible half inch. She caught fragmentary phrases of the second excavator: "Now if I budge that rock, the whole mass will probably slide down. . . . That would be a classic tool if it had a few retouches. . . . Here's a fine Magdalenian scraper—only it doesn't happen to be flint!" accompanied by a grunt of disgust as the offending chip was flung indignantly aside.

At noon the anthropologist crawled out of her hole with a guttered candle and the discouraging tidings

that the hearth had entirely disappeared. For several minutes there had been no sound from the other worker. Suddenly came a joyful whoop:

"I've found virgin soil!"

Flat on his face, the speaker lay along a narrow ledge below two wedged and projecting rocks, on the brink of a deep pit.

"Virgin soil at last," he repeated, pointing to a patch of earth not more than a foot square a few inches in advance of his nose. He set to work manfully, scratching away with his left hand, for his right was pinned to his side by the rock against which he lay. For a few minutes there was no sound but the thud of earth, the occasional glassy tinkle of a flint, and the brief comments of the excavator.

"Bone . . . splinter."

"Flint . . . flake, not retouched."

"Bone . . . burned."

"Piece of reindeer horn . . . catch if you want it." A fragment flew across the pit, fell short, and dropped.

"Never mind . . . no importance . . . tooth."

"Flint . . . chip."

"Bone . . . Hm, it begins to look as if the schoolteacher had exhausted the *couche!*"

The remark proved prophetic. Within half an hour the last trace of "virgin soil" had vanished; it had yielded in all only a single burin and a couple of tiny Magdalenian scrapers.

By the time we had stowed away lamp, tools, and *combinaisons,* noon was long since past. After a hur-

ried consultation we decided to content our hunger with a sandwich apiece—a time-saving device which would allow us a long afternoon at the cave of Gargas, the most important cavern of the Garonne region. With one last look at the melancholy emptiness of Gourdan, we made our way down the steep path to the grassy dyke above the river.

It was then we discovered that not one of the three had any definite idea as to the location of the second cave. "A few hundred yards away from Gourdan on the other side of the river," constituted all the indications that had been given us. Unfortunately, there were two rivers—the Garonne, sweeping to our left in a splendid curve, and just beyond, the gleaming current of the Neste, barely visible beyond the yellow vineyards. The only bridge in sight was a railroad trestle over the Garonne. We crossed gingerly, preceded by a stout peasant woman with a market basket, a baby, and a red umbrella, whose presence on the bridge allayed any nervousness we might have felt concerning the frequency of trains. Beyond the trestle lay a straight, gleaming stretch of track. Four kilometers to the town of Aventignan, they had told us at the station, a possible kilometer more to the cave—that made five. Five kilometers, three and one-eighth miles, that was no walk to speak of at two o'clock on an autumn day.

But the temperature at that hour in the Garonne valley was scarcely that of autumn. Above the rails the heat waves quivered and danced; overhead in a

cloudless sky stood an orb, hot and white as an August "silver sun." We plodded over the uneven ties, pausing at last for breath in the scanty shade of a ridge where a gang of workmen were repairing the road.

"How far to Aventignan?" we inquired. The men eyed us with timid hostility. One of them waved an arm towards a cluster of roofs in the plain at our left.

"That's Aventignan." We nodded our thanks, and a few rods beyond turned into a road that led across the valley to the town. Arrived in the outskirts, two of the party were content to seat themselves on a low stone wall while the third went ahead to procure the services of a guide to the cavern. From where they sat they could look into the paved courtyard of a farm, walled about like a fortress. In a doorway hung with scarlet vines a stalwart, dark-eyed girl was gorging a goose. Holding the gray fowl firmly between her knees, she poured handful on handful of corn into its open beak, ramming home each fresh charge with vigorous jabs of a smooth stick. The meditations of the onlookers as to the ethics of the manufacture of *foie gras* were interrupted by the return of their companion, hot and angry from his errand in the village.

"This is not Aventignan," he announced wrathfully. "It is four kilometers farther on." He pointed up the road over which we had come to a distant hillock with a church spire pricking up among tufts of trees. A moment of expressive silence greeted the words, while each of us pictured the unholy joy of the train gang at the success of their prank on the "foreigners"—for

throughout the mountains the foreigner, who may come from the next township, is always legitimate prey for local humorists.

Four additional kilometers over a blazing white road, and still another four before we reached the path that led up the slope towards the cave of Gargas. We paused at length on the edge of a chestnut grove at the top of a long grade. Straight before us, a mile or two away, stretched a line of rocky cliffs which looked vaguely familiar.

"Gourdan! *Tonnerre de tonnerre de . . .*" Paul flung himself, knapsack and all, in the heather by the roadside. For Gourdan it was. We had swung through four-fifths of the circumference of a circle. Instead of possibly four kilometers, we had walked fourteen.

The path to the cave led through a chestnut woods checkered with late sunlight and offering an occasional vista of far-away red hills. A turn brought us within sight of a cluster of wooden sheds. Gargas at last! But we had not yet reached the end of our misfortunes.

"Of all the bad luck! The guardian has gone."

An iron grating closed the opening of the cave, its lock reinforced by two padlocks and a chain. Close at hand a rustic arbor with tables and benches testified that the custodian of the cavern was accustomed to making an occasional penny off thirsty excursionists. But of the custodian himself we saw no sign.

"I wouldn't object to a glass of lemonade myself," murmured the anthropologist, her cheek against the bars.

There was a sudden halloo behind her.

Paul stood on the rim of the hillside, waving his arms. From the foot of the slope came an answering hail. A hundred yards below two men were cutting stone.

"We—want—to—visit—the—cave." The shout went ringing up among the rocks. A second later came the answer.

"All right. We have the key."

The men threw down their tools and climbed towards us, crashing through the underbrush. In a few minutes they had reached the terrace on which we stood. With considerable rattling of keys and clanking of chains the iron grating was unlocked. There was no lemonade, but we had beer, ice-cold from its cellar in the rock.

Passing through the low door of the cave, we stepped down into a vast round chamber like an immense wigwam, with a thick cylinder of stalagmite rising in the center like a tent pole. All about the walls and at the base of the stalagmite column ran shallow trenches made by archeological excavators.

Lowering her lamp into the pit by the big stalagmite, the osteologist of the Expedition gave a quick exclamation.

"Look, it is all bones!" Where we stood the stalagmite floor of the cave was fully eight inches thick. Beneath the floor and reaching to the bottom of the trench extended a mass of breccia, made up almost entirely of bone fragments, with here and there a

stone or flint chip, the whole welded together in a fixed, stony mass.

"We will have to take a look at this later on," we agreed. "But first we must visit the cavern. Do we keep straight ahead?"

"You haven't yet seen the hands," objected the guides. One of them walked towards the cave wall at our left and flashed his light full on the rock. In a shallow niche we made out the negative print of a human hand, outlined in red. Close beside it was another, and still another. The whole panel of rock was spattered with them.

"You will find them all about the room. And others are scattered throughout the cave."

The painted hands represent one of the most characteristic features of Gargas. One hundred and fifty of them have been counted by archeologists. For the most part they are negative handprints, made by placing the palm of the hand against the rock and applying pigment, black or red, about the fingers. Positive prints are rarer—those made by dipping a hand in color before laying it against the wall. The negative prints are generally those of the left hand, which would seem to indicate that the men of the far-away Age of Stone were, like ourselves, right-handed. The hands we saw were small—short, stubby, and thick-fingered. Many showed mutilated fingers. We noticed one imprint of a baby's hand and wrist, chubby and round.

Gargas, we discovered, is one of the "gray" caves.

It has neither the marble walls of the caverns of the mountains nor the glistening whiteness of those of the Plantaurel. Its walls are cement-gray, the floor, a succession of cement-hued stalagmite basins (*"gours"* in

NEGATIVE HANDPRINTS SHOWING MUTILATIONS, GARGAS

the language of the region) which prepare damp pitfalls for the feet of the unwary.

At the end of a series of wide galleries we were shown the opening of the famous *"oubliettes,"* a narrow pit nearly a hundred feet deep which had been

found choked with débris and which yielded complete skeletons of the cave bear, wolf and hyena. Beyond

MURAL ENGRAVING OF A STAG, GARGAS

the *oubliettes* a steep passage led to the upper cave—a vast hall, more picturesquely chaotic than the lower but less rich in the relics of buried centuries.

In the lower galleries we saw other examples of mural decoration besides the painted handprints. A cascade of stalagmite and the wall surfaces of two low chambers were covered with a network of engraved lines, so confused and interwoven that we had difficulty in deciphering a few of the animals represented. We made out several horses' heads and the contour of an

FINGER TRACINGS IN CLAY, GARGAS

elephant. Our artist succeeded in tracing the engraving of a great deer, the head of which he transferred to his sketch-book.

"This is Aurignacian art at its best," he observed, setting down with careful precision the dignified lines of the drawing.

Fully as interesting as the engravings were the series of figures and arabesques traced by finger tips in the clay-coated surface of certain of the cavern walls. In

a chamber adjacent to the opening of the *oubliettes* we were shown a series of horses' heads under a transparent coating of stalagmite. In a large niche like a little chapel the walls had been completely covered with finger tracings—arabesques, interlacements, lines in clusters of three, four, and five. They reached far over our heads, well out of reach of an ordinary arm.

"There is a whole vault with similar tracings in the cave of David at Cabrerets," the artist remarked, busy again with his pencil. "If we had more time, we might discover outlines of animals among these tangled curves."

"If we are going to look at the trench under the stalagmite column," the anthropologist objected, "I'm afraid there is little time left."

We consulted watches. Six o'clock—our train was already speeding up the valley towards Toulouse. But, after all, what did it matter? Weariness and hunger were long ago forgotten. If we had missed the evening train, there would always be another in the morning. Turning back to the panel of arabesques, the artist completed his careful copy of one of the more important figures.

His sketch completed, we retraced our steps to the entrance chamber. Donning his *combinaison,* Paul climbed into the trench at the base of the gray column. As there was only room for one person in the shallow pit, his two companions sat down on the rim of the shallow excavation to survey operations or tender help as the occasion required.

We had grouped our lamps at the end of the trench. "Like firelight," the anthropologist mused, her

PERFORATED TEETH AND AURIGNACIAN FLINT TOOLS, FROM GARGAS

Upper row, two perforated teeth, knife blade, *pointe de la Gravette;* lower row, burin and two scrapers. Scale, 3/4.

glance following the glowing beam to where it disappeared in the shadow overhead. Through her mind

flashed a sudden picture, peculiarly vivid, of a great bonfire built where we sat in the center of the vast hall—the glow of the flames driving the shadows up into a curtain of smoke overhead, and all about the littered clay floor, seated and recumbent human forms.

"Not a very comfortable place to sit, with all these bones," the excavator remarked. "Not to mention the odor."

"Perhaps it was so cold there wasn't any."

"Nonsense. You can't tell me anyone could camp on top of all of this," a gesture took in the fifteen-inch layer of animal bones, "without knowing it was there."

Minutes passed. We had lost all notion of time. Among the bones in the stony trench our companion discovered several flint scrapers of classic Aurignacian pattern, a couple of bone points, and one little flint *pointe de la Gravette* so perfect and so delicate that we had difficulty finding a spot safe enough to stow it away in.

He had just finished extracting part of a horse's jaw from an irregular block of breccia when someone beyond the ring of light gave an apologetic cough, and a voice spoke out of the shadow:

"Would you—would you care to hear the story of how they captured a bandit here in the cave a hundred years ago?"

We had forgotten the two guardians. With a twinge of remorse we remembered that the two old men had doubtless wives and suppers waiting for them down in the valley.

"I'm afraid it is getting late." The excavator stretched his cramped limbs and climbed out of the trench. "You must tell us the story of the bandit another time, when we come back to Gargas."

There was no longer a patch of blue in the doorway of the cave. Out-of-doors black shadow lay under the trees; across the valley a tufted hilltop stood in dark silhouette against a whorl of misty yellow light. As we looked, a gleaming yellow disk slid its warm rim above the fringe of trees. A harvest moon, the brush of dropping chestnut leaves, a curved white road and the rustle of water in the shadow, these and a belated though excellent dinner at the railroad restaurant of Montréjeau marked the end of our day in the Garonne valley. And then, trains, bicycles, and a ten-mile ride through clinging river mist. We reached Ste. Croix at four o'clock in the morning.

CHAPTER XII

THE QUARREL OF MONTESPAN

"WOULD you care to hear the latest on Montespan?" The anthropologist in her high-backed Spanish chair was deep in a volume of European archeology we had received that morning from the publishers.

"Listen to this," she continued, brandishing the big blue book. "The young discoverer of the grotto at Montespan 'deserves high praise for the courage and skill exhibited in meeting difficulties. . . . He swam a subterranean stream for 1,190 meters (about 3,900 feet) and passed through a siphon under water to be finally rewarded by his notable discoveries.'

"1,190 meters—hm!" Leaning through the window under the grapevines, the artist rested his elbows on the narrow ledge while he made mental calculations as to the physical endurance required by such a feat, in the light of his own recent experience with the icy waters of the *Tuto Herido*.

"I, for one, don't believe it," the third of us stated flatly. "It sounds like the usual Meridional exaggeration. No one could swim a mile in ice water. And besides, no two people tell the same story. I am be-

ginning to think there is something in the quarrel of Montespan after all."

The artist wrinkled his brows.

"I suppose the best solution would be to try the experience for ourselves."

"But they say that the cave is sealed and barred, that no one is permitted to visit it," he was reminded.

"They say a lot of things. But don't you worry, we shall find a way." We decided to make our raid on the disputed cavern the following day.

The cave of the *Houantaou* at Montespan had aroused considerable discussion in archeological circles ever since its discovery in 1923. A young man of the neighborhood, while exploring a subterranean river, came upon a gallery containing prehistoric clay statues and engravings—a find of undeniable importance which had received an extensive amount of what scientific friends regarded as "unfortunate" publicity in the press. Newspapers and magazines sent reporters to Montespan and printed photographs of the "daring young explorer" clad in a bathing suit and posed advantageously against a background of stalactites. But the fortunate young man was not left long in undisputed possession of his laurels. Rumors began to circulate. The cave itself was all and more than had been claimed, but its young explorer had perhaps exaggerated his personal prowess. The underground river was much too shallow to swim, while the famous "siphon," it was affirmed, had never been completely submerged. It was even whispered that he had no

right to the title of discoverer. The rumors spread, giving rise to acrimonious comments in the local newspapers. Friends and strangers, even men of science, took sides. Thus arose the "quarrel of Montespan," which for all its pettiness was none the less heated and bitter. All of this had whetted our curiosity. The thousand-meter swim as recorded by the American archeologist furnished an immediate pretext for visiting the cave.

Again the Garonne valley with its yellow vineyards, russet hillsides, and the ranks of poplar trees—the celebrated *"ramiers"* — marching along the river. There were vistas of tributary valleys opening towards the mountains, with clustering farmhouse roofs and warm brown walls of castles perched on pointed hillocks—crumbling ruins since the days of Richelieu and his cannon.

We left the train where the blue cone of the Cagir bit into the sky like a gigantic tooth. To our surprise, we discovered that though the railroad passed through the town of our destination, the station itself stood solitary among the potato fields a full kilometer distant. It had been built, we learned later, to accommodate a noble gentleman of the neighborhood who preferred that the station be located in immediate proximity to his château, disregarding the needs of the townspeople, who were forced to trudge over a thousand yards of country road before reaching their homes. *Noblesse oblige.* We passed a score or so of peasants lugging heavy sacks or balancing bas-

kets of eggs and cabbages on their kerchiefed heads, for it was market day at the village.

We had letters to a local schoolmaster, an enthusiastic explorer of caves who had excavated several important sites in the Garonne valley. He received us with cordiality and showed us his collections, among which was an important series of flints from the cavern of Tarté and—to our complete confusion—a half-dozen Magdalenian harpoons and javelin points which he had found at Gourdan only a week before.

When we confided the real purpose of our visit, our host grew pessimistic.

"The cave of Montespan is barred and padlocked at either end," he told us. "No one can hope to visit it without special permission, and special permission . . . takes time." The gesture that finished his phrase gave us to understand that for occult reasons such permission was not easily to be obtained. We asked whether there was any truth in the rumor that a local hotel-keeper had bought up the two entrances of the grotto with the intention of exploiting it commercially as an attraction for tourists.

"Yes and no." The owner was in fact a hotel-keeper, but he had been named guardian of the cave by the Ministry of Public Instruction. It was true that he had closed the *Houantaou* to the public until the work of protecting the prehistoric gallery was completed, in order that the sculptures and engravings might be safeguarded from careless visitors. A thoroughly laudable intention, and one which we could not

help but approve. But in the light of it our chances of visiting the cave seemed considerably reduced.

"If I had only known a day or two in advance, it might have been arranged. As it is, however, I am afraid . . ."

Again the hopeless gesture. Of the three of us, the artist was the only one not to appear crestfallen.

"Don't give up, the day isn't over," he whispered encouragingly. Our host suggested that instead of attempting a fruitless excursion to the closed cavern, we should accompany him to a series of rock shelters he was then engaged in excavating. As it turned out, we did not waste our morning. The shelters of La Roque proved to be as interesting a site as any we had yet visited. They were located under a tangle of brush and brambles on the face of a cliff overlooking the Garonne—chambers and galleries, niches and wells, choked with earth, blocked by fallen rocks, and overgrown with a thick curtain of green.

The shelters faced towards the north, testifying that prehistoric peoples did not always seek a southern exposure. But the Garonne valley was broad and sunny, the river close at hand; game abounded in the nearby hills. On the whole, the shelters of La Roque must have been a pleasant place to live in. Our guide explained that he had only just begun his excavations, but he had already uncovered three Azilian layers which had yielded the characteristic flat harpoons of stag horn, round flint scrapers, and typical animal bones of the period.

After lunch we again broached the question of the *Houantaou.* The schoolmaster smiled at our persistency.

"Even if it were possible to visit the cave, it would scarcely be prudent to wade through ice water so soon after lunch," he demurred. The remark was meant to be final, but he had counted without Paul.

"There is no reason, is there, why we should not take a look at the outside of the hole?" he suggested.

"No-o." That is to say, the afternoon was hot, the road to Montespan very steep—uphill all the way, the outside of the entrance offered no particular interest. However, since we insisted, we might walk in the direction of Montespan and push on towards another cave, the *Spugo de Ganties,* one of the most important caverns of the region but so choked with débris that the excavations had never been completed.

Having crossed the Garonne, a climb neither so steep nor so long as we had anticipated brought us within sight of the town of Montespan, nestling on the flank of a little hill crowned by the gray walls of its castle. Leaving the town at our left, we turned down the slope to a farmhouse gate. A peasant woman wearing a broad leghorn over her black kerchief, her skirts tucked up in paniers about her waist, was making soup for the pig in an iron kettle hung on a crane over a bonfire. She looked up to greet us with a cordial *"Bonjour, Monsieur et compagnie!"*

"Going up to the *Houantaou?"* she continued, stirring the steaming porridge of beans and potatoes with

a long wooden spoon. "It is too bad you didn't come yesterday, for you could have visited the cave with the *architecte départemental*."

We expressed our regrets, which were not wholly disinterested, at having missed the official by twenty-four hours and inquired whether we might leave our bicycles in the courtyard of the farm. Our guide suggested that we likewise abandon the sack containing the *combinaisons* which we had insisted on bringing . . . in case . . . . But we proved obdurate; the sack continued to accompany us.

Beyond the farmhouse our path lay across the pastures. At the top of a short steep incline the schoolmaster paused.

"There is the stream that flows through the cave of Montespan," he said, indicating a little brook that, several yards below us, issued from under a mossy rock.

"It disappears at Ganties, the other entrance to the cave," he went on, "and comes out into the light again after having traveled a kilometer or more underground. As you are doubtless aware, it is possible to reach the prehistoric gallery from the other opening, though the passage is not easy and one must wade through water nearly all of the way. Besides, the Ganties entrance is also locked," he added hastily, seeing us exchange hopeful glances at his words. "One generally enters the cave at this end, not through the fissure in the rock through which the stream flows, but by means of a well-like opening just above, which leads down into a dry gallery."

A few rods down the slope, and we had reached the well—a hole barely three feet in diameter which dropped away vertically for a couple of yards. Peering into the opening, we could make out the gravel bottom of a gallery out of which came a blast of chilly air. Between us and the gravel a substantial iron grating had been firmly cemented in the rock. A central bar, fitted with a hinge, was heavily chained and padlocked.

Our guide lowered himself into the well, his feet resting on the grating.

"You see, it is quite impossible to go any farther," he remarked, stooping to test the iron lock. He had barely touched it with his finger tips—there was a clinking sound and the bar slipped from its groove and dropped, hinge and all, hanging from the lock. The schoolmaster lifted an astonished face. "How on earth—" he began. But the artist, bending above the hole, called his attention to the fresh marks left by a chisel in the cement.

"The grating has been forced." Our guide rubbed a hand across his forehead. "I wonder who—" A light broke over his face. "I have it! It must have been the *architecte*."

The official charged with the protection of historic—and prehistoric—monuments! The three of us exchanged glances.

"At least he had a precedent," the anthropologist remarked dryly. She had not forgotten the story of the broken grating at Niaux.

"He probably forgot the key. And of course he had no time to send for it to Ganties," the schoolmaster explained.

"Evidently not." Our artist grinned appreciatively. "And while we cannot precisely admire the quality of his custodianship, we have no scruples in taking advantage of the opportunity he has provided to visit *le Houantaou!*"

Our guide looked worried.

"If only I had brought an extra pair of trousers!" he murmured, with a regretful glance down at his neat gray suit. "And why didn't we think to bring a half-dozen candles?"

"Is that all?" Paul stopped short in the act of drawing on his cave overalls. "Candles can be bought at the village, and I am certain we can find a pair of old corduroys back at the farm."

No sooner said than done. We had scarcely time to don our sandals and button ourselves into cave clothes before our companion was back again from his brief raid with a handful of candles and the promised trousers. Something of his enthusiasm must have communicated itself to our guide. He offered no further resistance, made himself ready with all speed, and lowered his body into the hole. The three of us followed.

At the bottom of a shallow well we found ourselves in a long gallery from the left of which came a rustle of water.

"Keep to the right wall and avoid the stream," the

schoolmaster warned us. We moved forward single file, our candles flickering in the draft. As we advanced, our guide pointed out a shallow trench in the gravel floor, explaining how he had worked for hours with pick and shovel creating an outlet for the water of the famous siphon. The level dropped for over a foot; when the official scientists came to Montespan a few days later, they were able to walk through the difficult passage almost dry-shod. At the time of our visit the trench was dry, choked with gravel by the spring torrents. It seemed probable that the level of the siphon would be no lower than it had been when the first explorer of the inner cave made his way through the passage.

"Shall we have to swim?" the anthropologist inquired dubiously. The schoolmaster gave a short laugh.

"You may get wet, but I will guarantee that you get through without your feet leaving the bottom," he reassured her. As he spoke we reached the end of the gallery, where roof and floor sloped abruptly downwards and the walls narrowed in on either hand.

"The siphon," announced our guide, holding out the candle at arm's length. "There is less water than I had expected." Grouped about the speaker, we peered ahead into the shadow. From Paul's direction came a splash and an exclamation. He had encountered the pool—that limpid, still subterranean water, clear as air, impossible to distinguish in the uncertain light until an unwary step sent a host of ripples shivering

across its transparent surface. Overhead the rocky vault dropped to within a couple of feet of the pool.

"When the first explorer passed through, there was barely a six-inch space between water and rock. Unfortunately, you must stoop in order to pass, otherwise it would be a very simple matter." Bending forward at the waist, our guide strode into the pool; the three of us followed, gasping noisily at the icy contact.

To our surprise, the passage through the "siphon" had barely begun . . . when it was over. After a couple of yards, bent double under the rock, we were able to stand upright again. At the deepest point we had been only to mid-thigh in water. From then on the stream was little more than ankle deep.

"So that was the famous siphon? Shades of Tartarin!" The artist turned to scrutinize the passage through which we had come.

"I suppose it is possible to swim in a bathtub, but I can't imagine diving in thirty inches of water—or even . . fifty," he corrected, estimating the distance from the rock ceiling to clay bottom. The silence that greeted his words was in itself a commentary. From that moment on there was no doubt in any of our minds as to our own attitude with respect to the "quarrel of Montespan."

Beyond the siphon we slipped and splashed over the wet clay, stumbling over submerged stalagmites and slippery hidden rocks. At the end of the corridor we were following, we came to a rock chamber that glistened white with cascades of stalactites. There the

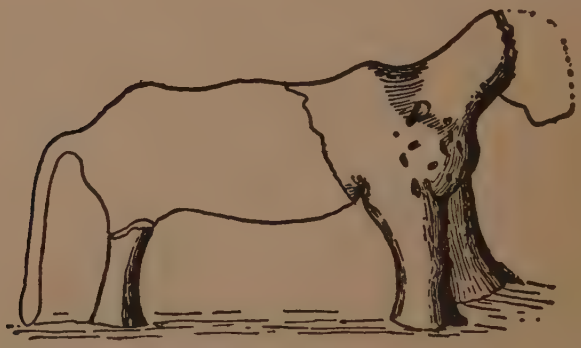
stream disappeared, though pools of water shone between scattered blocks of limestone. As we clambered up a dome-like boulder formed of stalagmites, the artist indicated a shallow pool below us.

"Do you recognize the spot," he inquired, waving a hand towards a frozen curtain of stalagmite on the farther side of the pool. His companions nodded. The words had called up the image of a young man in a bathing suit, standing on the farther shore of what appeared to be a vast subterranean lake. Vast? It was in reality barely three yards wide! "Extraordinary southern atmosphere! It corrupts even the camera," Paul observed with a grin as he splashed his way across the pool and climbed the glistening slope on the other side.

Three galleries opened out from the rock chamber: one, the long passage leading to Ganties; a second, of no particular interest, which ended in a blind wall; and a third, the gallery we had come to see, situated on a higher level than the others. We climbed up to it over a kind of stairway formed by a series of stalagmite basins with picturesque rippling borders, like the "*gours*" at Gargas, dry at the time of our visit but which during the winter season must form a series of cascades and pools.

For two-thirds of the length of the gallery it was possible to stand upright. Eager first of all to see the much-discussed clay figures, we made our way forward, with heads bent to avoid contact with the hundreds of sharp little stalactites that dotted like icy

bristles the vault above us. Half-way down the passage we came to the figure of a cat-like animal modeled in high relief against a ledge of clay. Only the neck, fore leg, and one hind leg still remained in place. The rest had fallen to the floor, where it lay in formless chunks which showed here and there traces of modeled



FELINE ANIMAL MODELED IN CLAY, MONTESPAN

The sketch shows the wounds piercing the breast and shoulder. After Breuil.

surface. The outlines of the big feline were still visible, however, on the smooth clay background. It had been modeled in the rough with no attention given to details, and throat and neck were pierced with deep holes. Beyond, the wall showed traces of two other animal figures, nothing of which remained but the bare outlines, too vague for us to determine what species of beast they represented.

A few yards farther on, where the walls of the gallery widened out to form a circular chamber, we came

to another animal. Modeled in full relief, it stood on a low clay platform several feet away from the side of the passage. No mistaking its identity; the bulk, the posture, firmly planted on stocky paws, made us recognize it even before our guide advanced his two candles, announcing, "the Bear of Montespan!"

BEAR MODELED IN CLAY, MONTESPAN

It was a headless figure, nearly four feet long, modeled with the simple technique of the great cat we had just passed. Seen in the half light, it was indeed the image of that first of cave dwellers as many a human troglodyte must have encountered him—with head down and sagging belly, blocking with his mass the dark end of a cave. It was clear that the statue had always been headless, for the cross section of the neck was rubbed as smooth as the other surfaces. Between its forepaws, on the clay platform, lay the skull of a

young bear. It has been suggested that the skull was originally adjusted to the modeled figure and the entire animal covered with a bearskin. A series of holes, made by some sharp instrument, pierced the back and flanks of the beast, reminding us of the multitudes of

HORSE ENGRAVED AND MODELED IN CLAY, MONTESPAN
After Breuil.

tiny circles scattered over the engraving of the wounded bear in the cavern of the *Trois Frères*.

Not far from the bear we found the silhouette of a horse, with nose in the air and lifted tail, modeled in low relief on the clay floor. Only two legs of the alert little figure were visible, but the artist had drawn a series of parallel curves, stretching forward from the animal's chest, which seemed to indicate the move-

ment of the left fore leg as if the horse were pawing. Head, throat, and belly bore a succession of deep gashes.

Close by, we made out two other horses in bas-relief, one of which represented a mare heavy with young; both were badly water-worn and disfigured.

All about us, as we crouched on our heels under the low vault, the floor of the cave rippled in lumpy ridges—the traces of an entire herd of animals, all of which were so damaged as to be quite indistinguishable. It was difficult to avoid treading upon them. Someone had laid strips of paper and fragments of stalactite about the better-preserved of the series, but we saw modern footprints everywhere, together with marks left by hobnails and careless fingers.

"If they ever let the public in here, there won't be anything left of the gallery," our artist remarked, pointing out the circular depression left by the base of an acetylene lantern on the smooth flank of one of the modeled horses.

"It is the same old story," he went on. "No one wants to spend the money necessary to insure the cave against ordinary visitors. The average tourist will see nothing of interest in these worn lumps of clay. And you can imagine, after all the publicity that has been given this particular cavern, how many people will want to visit it! All the bars in the world won't keep them away."

"Witness ourselves," a voice observed slyly.

"I might observe that our case is different. Even

our enthusiasm would have respected the padlock." Paul on hands and knees was engaged in the low passage that terminates the gallery. Beyond the chamber of the bear, the vault dropped abruptly to within a few inches of the floor at either wall but left in the center an arched space high enough to admit the body of a man. The clay surface of the archway showed dozens of little engravings, water-worn but distinct—horse, deer, bison, cattle, and one little animal with bristling mane that resembled a hyena.

None of the figures had great æsthetic value, but all were faithfully drawn, with the life and vigor that is never absent from prehistoric art, however primitive its expression. The technique of the engravings pointed to a very ancient form of Magdalenian drawing. Besides, the few flint tools that have been found in the cave of Montespan, on high clay ledges or tucked away in hollows of the rock, were all scrapers and gravers of typical Magdalenian pattern.

Aside from the modeled figures and engravings, we saw other evidences of prehistoric occupation which have immense importance for students of the period. Along the walls of the entire gallery, from the stalagmite stairway to the narrow pit where the passage drops away to unsounded depths, we surveyed an infinite number of magic signs and symbols. For the cave of Montespan, like Tuc d'Audoubert, Niaux, and Marsoulas, was not a habitation but a sanctuary. Its clay-coated walls bear the marks of hundreds of fingers—sometimes thrust deep into the wall to extract

handfuls of clay, sometimes trailed along the surface in long lines, vertical and horizontal. Strange figures—rectangles, ovals, circles—have been traced with finger tips or a pointed instrument. Red and black dots mark exposed angles of rock. At the very end of the gallery we noticed a clublike figure painted in red above the engraved image of a bison. Here and there handfuls of clay plastered against the rock showed traces of fingerprints; fissures had been filled with clay and then perforated with rows of holes. Along the ledges lay little clay balls, of the size of crab apples, some of them modeled in such a way as to suggest female symbols of fecundity. And over all, fingerprints, signs, and perforations, was spread a thin coating of stalagmite.

As we wandered up and down the passage, two of us with notebooks and the artist busy with his sketching block, never had the prehistoric world seemed closer, and never had its mystery appeared more impenetrable. Fingerprints as distinct as if they had been made yesterday, and yet more than a hundred centuries had passed since a Magdalenian hand had marked them on the damp clay wall! How little we knew of that far-away ancestor of ours, after all! And how much could we ever hope to know?

Minutes passed. Our candles burned to waxy fragments that flared in long yellow flames and dripped hot tallow on our hands. Our wet *combinaisons* had become veritable sheaths of ice. But it was left for our guide, who had no thrill of discovery to warm his

chilly limbs, to remind us that a modern world existed outside—a discreet phrase about trains and dinners.

Reluctantly we turned away from the sanctuary of the Magdalenians, flashing our light for the last time on the bulk of the bear and the crumbling relief of the lions. At the foot of the stalagmite stair the water of the subterranean stream seemed almost warm.

Out in the world, the day had ended. Purple vapor veiled the distant Garonne, and lights shone out on the slope of Montespan. Seated on the grass, we filled our cold lungs with the soft evening air.

A voice spoke out of the dusk. "Well, what do you think of the 'quarrel of Montespan'?"

"We dropped it in the cave." Paul spoke with decision, stripping off his sodden sandals.

CHAPTER XIII

THE RED GROTTO OF CABRERETS

A STAIRWAY led into the rock, down a well that had been dynamited through fifty feet of limestone. At the bottom a steel door painted red opened into the cavern.

"May we help you with the lanterns?"

The explorer of the cavern of David shook his dark head.

"A party of tourists is visiting the cave. We shall have to wait until they come out. In the meantime, I have only one." He emptied a shower of powdery carbide from the iron socket of his miner's lamp.

Grateful for the respite, the three of us found seats on the broken rocks that littered the hilltop. Across the valley heat waves were dancing along a jagged crest of limestone. Far below in the hollow, Cabrerets and its towers spread splotches of tender gray in the afternoon sun.

Ste. Croix and the *Tuto Bioudeto* lay miles behind us to the west and south. We had spent a fortnight among the caves and rock shelters of Dordogne. Guided by the excavator of the region, we had visited one by one the prehistoric sites, already well known

to international tourists, that cluster about the great rock of Les Eyzies. We had seen the stone horses of Cap Blanc and the sculptured fish of the Gorge d'Enfer. We had lingered over the faded frescoes in the cavern of Font-de-Gaume, and, crouched in the low corridor of Combarelles, had deciphered fragments of its tangle of animal engravings. At Le Moustier and La Madeleine, type stations after which two prehistoric civilizations have been named, we had gathered typical flint tools in the débris of old excavations. And at last, turning south again, we had followed the broad valley of the Lot to the town of Cabrerets, above which, pierced in the rocky hill, is the well-like opening that leads into one of the most famous of French caverns, the recently discovered *Grotte de David*.

It was a little boy of the neighborhood who found the cave two years before our visit, but the galleries composing the cavern have been explored from end to end by the energetic young priest of Cabrerets, who revealed the series of wall decorations whose variety and beauty place the *Grotte de David* among the foremost of the great painted caves.

Hidden away in the hills of Lot and inaccessible except to determined explorers—for the original entrance was a narrow tunnel three hundred yards long through which one was obliged to crawl on hands and knees—David's cave has been spared the vandalism that has worked havoc in tourist-ridden Dordogne and is now menacing the grotto of Niaux and the caverns of the Pyrenees. To-day, with its primitive beauty

IN THE VALLEY OF THE LOT

intact, it remains quite as it was when the Aurignacians abandoned it, over twenty thousand years ago.

Quite intact—and yet there is not a gallery where modern man has not left traces of his passage. When, with lamps in hand, the skirts of his cassock flapping about his sturdy legs, our guide preceded us down the cement stairway of the well and flung open the steel door leading into the cave, our "oh!" of admiration was prompted by something more than the natural beauties of the cavern.

A sunken path which permitted us to stand erect under the low vault had been dug through the center of the passage. It was bordered on either side by a substantial iron fence. Above our heads a woven wire screen protected a shower of slender stalactites that hung within reach of curious fingers.

"We closed the galleries to the public until a few weeks ago. Now no possible harm can come either to the cave itself or to the prehistoric marvels it contains. We have made it vandal-proof." The young man called our attention to the wire barriers.

"In a way it robs the cavern of something of its primitive charm. But if you are going to admit tourists, you are forced to take protective measures. Otherwise—" He threw up his hand in an expressive gesture.

We nodded our approval, remembering the series of mutilated caves—Font-de-Gaume in Dordogne, and Marsoulas, and the Mas d'Azil in our own Pyrenees region.

"But it must have necessitated considerable funds."

The priest smiled. "Luckily for us, we found someone who was willing to supply them."

"Not the Government, I take it!"

"The Government has no money." The reply was discretion itself.

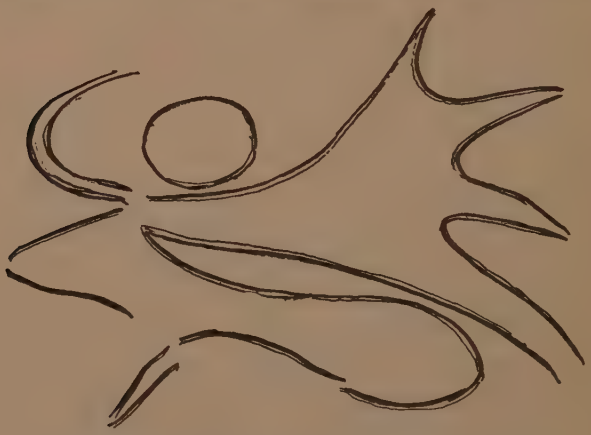
"Well, whoever he was, your Mæcenas deserves the undying thanks of all of us for sinking his capital in the earth. It would be a good thing for France if a few others might be induced to follow his example. The death of the old Prince of Monaco was a serious loss to prehistory in this country."

The words echoed a sentiment which we had heard expressed from one end of France to the other during the past few months.

With a series of soft little clucks three acetylene burners thrust out their forked white tongues. The young priest led the way, walking before us through the dark gallery, his long black silhouette haloed with dancing light, while at either hand the cavern walls flashed into mysterious life in a shifting pattern of color and shadow. Red rocks and gray, glistening sheets of stalagmite, clusters of flower crystals clear and golden as mountain honey, long white needles each with its pendulous water drop.

"I am glad we are seeing David's cave before they install electricity," one of us murmured, directing the flame of a lamp full on a strange rock garden of tangled coral-like forms that writhed, curiously lifelike, in the uncertain light.

"Please don't imagine that we plan to flood the cave with a blaze of electricity!" Our guide, who had overheard the remark, paused in his brisk trot. "Just a lamp here and there, placed with care not to destroy the atmosphere. As for wall decorations such as these, we shall have to arrange a special system of lighting



GIANT DEER TRACED IN CLAY, CAVE OF DAVID

After Breuil.

to preserve the relief from every side." He held his lamp at arm's length over his head.

Above an arched opening that led into another passage we made out the contour of a deer traced by a finger tip in sweeping strokes on the soft clay coating of the rock.

"*Cervus megaceros,*" he pointed to the broad curves of a giant antler. "That shows that the cave was decorated by Aurignacians. The great deer still ex-

isted when the Cro-Magnons came to Europe. And besides, that sweeping technique is unmistakable. You will find further proof in the next gallery."

We passed under the archway into a lofty chamber strewn with huge gray blocks. A few steps forward and with one accord we stopped short. We were face to face with a painted panel. An intricate composition in black and red stood out in stunning relief against the gray ground of one of the fallen blocks. Two horses, nearly life size and with exaggerated slenderness of limb, had been sketched in black outline, with the contours slightly shaded. A multitude of spots, black and red, scattered over shoulder and flanks gave the two animals a curiously dappled appearance. Similar disks of color dotted the rest of the panel. Along the back of one of the horses we made out the drawing of a fish with slender pointed nose and unfinished tail. Five handprints in red ochre marked the borders of the composition. But unlike the stubby hands we saw on the walls of the cave of Gargas, these had long, tapering fingers. One of the five, more slender than the others, was very evidently the hand of a woman.

"A curious technique, but undeniably Aurignacian," commented our artist.

"Who did it interests me less than why." The anthropologist wrinkled her brows as she eyed the enigmatical spots of color.

"Call it magic—that is always a convenient explanation for things no one is clever enough to explain. And

there can be no doubt that the *Grotte de David* was a sanctuary." The third member of the Expedition sent the stream of light from her lantern radiating like the spokes of a wheel through the shadows of the great hall.

She spoke truly. The men of Cro-Magnon never lived in David's cave. Like Niaux, Tuc d'Audoubert, and Montespan, it was holy ground, the scene of mystic ceremonies that left their traces in color and design on the smooth rock surfaces. We saw no indications of sculpture or modeling; but not far distant from the panel with the horses we were shown a gray stone fragment upon which a round, breast-like protuberance had been rubbed smooth and polished by the caresses of adoring lips and hands. As we climbed among the great blocks, up an ingenious scaffolding of ladder-like stairs, we came on a solitary human figure, very like the red grotesques we had seen at *Le Portel*, crudely drawn in red on a white ground.

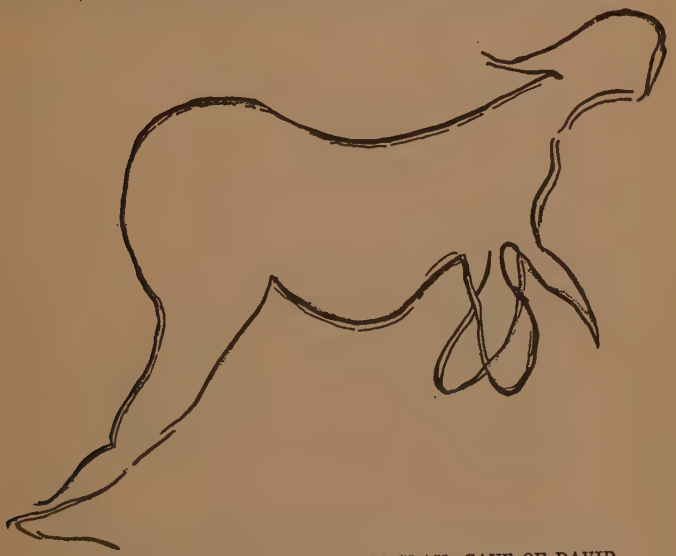
"We call him the 'Sorcerer,'" the priest explained, pointing to a curved line which appeared to form a tail, and a series of zigzags issuing from the head of the figure, which might be interpreted as horns.

Continuing our climb, a few rods farther brought us to the summit of the chaotic heap of blocks. We stood directly under the vault of the great hall, the floor of which lay lost in shadow many feet below. Just above our heads the soft clay coating of the vault was streaked with what first appeared to be merely a confused tangle of interwoven lines, but as we scru-

PANEL OF HORSES IN BLACK AND RED, CAVE OF DAVID

After *L'Illustration.*

tinized it closely—keeping our footing with difficulty on the uneven pinnacle of stone—we made out a series of figures, the most curious of the entire cavern. It was a composition of four human shapes—three women, naked, with long pendent breasts, creeping on



CREEPING WOMAN TRACED IN CLAY, CAVE OF DAVID
After Breuil.

all fours towards the recumbent figure of a warrior, lying as if in death with shield and spear at his side.

All the figures but one were headless and with hands and feet barely suggested. The bodies of the women—their heavy breasts, slender limbs, and exaggerated hips and abdomen—corresponded perfectly to the requirements of Aurignacian æsthetics as illustrated by

the reliefs of Laussel or the Venus of Lespugue. It was evident that the drawing represented some form of ritual dance, the four human figures forming the central *motifs* of a complicated design in which appeared the contours of several mammoths and one great feline, the whole woven together in an intricate pattern of lines. Where we stood, the roof of the cavern was well out of reach of any man of normal height. The Aurignacian artist must have traced the panel with a stick while he maintained a precarious balance on the brink of a rocky chasm—difficulties of which there remained no trace in the sweeping lines of the composition.

We continued our march. Gallery succeeded gallery—arctic chambers of ice and snow, warm red passages glowing with infernal light, halls draped with cloth of gold and upheld by giant columns. And through it all—the mazes of that ancient temple—the priest led the way, a severe young figure with dark cassock and lifted lamp like the symbol of an austere new religion in a colorful heathen world. We visited two small chambers. In one of them we saw the engraving of a bear, cut by a fine flint tool in the gray wall of rock. The second was strewn with the cave bear's bones and fossilized excrement of hyenas.

And then we came to another painted panel. A brilliant pattern of black and white—mammoth, bison, and horses, sketched in bold outline and covered with a glistening, transparent varnish of stalagmite. Fifteen feet long and nearly as high, it was like the car-

toon of an unfinished fresco whose ensemble was destined never to exist except in the imagination of the artist. Some of the images were fragmentary—a bison's hump, the head, feet, or trunk of a mammoth; only a few had been completed. The rearing shape of a woolly mammoth was drawn in a series of vertical

PAINTED MAMMOTH, CAVE OF DAVID

strokes. The horses resembled those we had seen on the gray panel with the painted hands: they were small-headed and slender of leg. One of the mammoths bore traces of the same curious spottings that had marked the bodies of the horses on the first panel. As vividly executed as the painted bison of Niaux, these frescoes belonged to an older period. Very

ancient Magdalenian if not Aurignacian, they had the dignity and precision of that first and greatest period of Paleolithic art.

The *Grotte de David* is rich in frescoes. None of the caverns we had visited contained such abundance and variety of this form of Paleolithic art. The drawings were everywhere—on walls, stalactite columns, and fragments of fallen rock. Isolated figures and groups of animals, they were sketched in black or red outline for the most part, though we noticed one little doe's head done in impressionistic red dots like the bisons at Marsoulas.

Paintings everywhere, but of the men who drew them no trace. Or nearly none. In all his careful exploring of the cave, the young priest of Cabrerets had discovered only a single flint—a graving tool of Aurignacian workmanship, together with the canine of a bear, found on a lofty narrow ledge of rock where only a human hand could have placed it. There were no hearths in the great temple. It seems probable that the Aurignacian tribes whose sanctuary it was came there as pilgrims and went away again once the ceremonies of their cult were at an end. But we detected one trace of their passage that was in itself very moving. In a remote gallery of the cavern, at the entrance of a dark passage which plunged abruptly down into deeper shadow, our guide pointed out a series of depressions in the gray stalagmite that covered the cave floor. They were footprints—two slender and delicately modeled, and three others, miniature copies of

the first. A woman had stood there, peering into the dark opening of the descending passage, with a little child standing before her, pressing close against her knees. The soft clay floor had kept the imprint, and the centuries had translated into stone the gesture of a frightened child . . . twenty thousand years ago.

"Where did the men come from who ornamented the *Grotte de David?* Have you found Aurignacian rock shelters and hearths in the neighborhood?" we asked. Shutting the red steel door behind us, we had trudged up the steep stairway into an out-of-doors only a trifle less somber than the underground world we had left. Down in the valley the lights of Cabrerets twinkled as if the entire population had—like ourselves—gone exploring under an immense dark vault in which not a star shone out.

In reply to our inquiry the young priest shook his head.

"We have discovered nothing important enough to have sheltered the tribes that decorated David's cave. To be sure, there is the cavern of Marcenac, but it contains engravings and wall paintings, with practically no traces of actual habitation."

"Perhaps the Aurignacians came from a distance," we suggested. "Or perhaps there are still shelters that you have not yet excavated."

Our guide nodded.

"You may very well be right. For there is no lack of caves. However, nearly all those that have been excavated were not inhabited before the period of the

Magdalenians. They have yielded interesting examples of portable art. If you have time, I should be glad to show you our collection."

In an upper room of the presbytery the priest of Cabrerets had brought together a little museum of the civilizations that succeeded each other thousands of years ago among the hills of Lot. Gallo-Roman bronzes jostled stone hand mills and jars of coarse Neolithic pottery. Looped Azilian harpoons of rude manufacture—among which, however, we noticed one whose finer lines recalled our own harpoon of Montardit—contrasted sharply with the slender grooved shafts and barbs of similar Magdalenian implements. Flint tools of "classic" shapes, with Magdalenian predominating—scrapers, awls, and gravers—lined the walls in orderly rows.

But by far the most interesting feature of the collection was a group of engraved stones. Flat pebbles for the most part, smaller than the palm of the hand, each bore on its smooth, water-worn surface the delicate contour of an animal. Sketched by the Magdalenian artist with the finest of flint burins, they were vivid little drawings of beasts in motion—a doe licking its side, a trotting horse, a charging bison, a leaping goat. Two of them showed a curiously impressionistic technique, a marked departure from the customary realism of Magdalenian drawing. A wild boar surging through the grass was represented with only two feet, the others being merely suggested by a series of oblique strokes. The second engraving, cut

ENGRAVINGS ON GALETS FROM THE ROCK SHELTER OF MURAT, NEAR CABRERETS

After Lemozi.

on a limestone fragment, offered a cinematographic image of a feline on the hunt, a succession of broken lines giving a remarkable illusion of the supple movement of the great cat nosing its cautious way through the thicket.

The priest showed us his tracings of the frescoes in the cavern of David, paper panels of such size that he had difficulty finding floor space in the little presbytery on which to display them.

"The ceiling was the worst of all," he admitted modestly, "for I had to work most of the time lying on my back. I blocked it off, square by square. I think it is as exact a copy as we can hope to get, although, of course, the soft clay surface of the vault makes it impossible to apply the paper directly."

He spread out the panel with its strange decoration of mammoths and creeping women. When one considers that a single tracing is often the result of days of painstaking effort, it was appalling to think of the labor represented by the dozens of such copies which their author unfolded, sheet after sheet, to our unqualified admiration.

"Lucky Cabrerets!" was our comment, when, having taken leave of the learned young cicerone, we groped our way down the dark village street. "Lucky Cabrerets, to have a cave, a Mæcenas, and an archeologist, all on the spot." With the exception of Tuc d'Audoubert, the only other cavern as perfectly preserved as that of David, this was the first time that happy combination had occurred to our knowledge

since the art caves of southern France were made known to students of prehistory.

The young priest was not the only archeologist we encountered that day at Cabrerets. In the dining room of the inn whither we had been directed for the night, an Englishwoman sat sewing by the lamp. While hasty preparations were being made for our belated dinner, the four of us fell into conversation.

"If you are interested in caves, my daughter will be delighted to see you. She is a great devotee of prehistory. For the past two summers she has been doing considerable digging by herself here and there in the district."

We expressed our eagerness to meet a fellow enthusiast, wondering meanwhile why the priest had neglected to mention the presence of this second archeologist in the town.

"She has found flints, of course, and Magdalenian harpoons and javelin points," the mother continued. "But her most interesting discovery was an engraved stone. She was so overcome by the find that she had to go to bed."

There was a sound of steps in the hall.

"Is that you, Dorothy?" the Englishwoman inquired, turning towards the dark doorway. "Would you bring down the photograph of the engraved pebble you found at Marcenac? We haven't the stone here," she explained to us. "She insisted on leaving it in the safe-deposit vault of our bank when we left England."

We heard the sound of light feet running down the

old wooden stairs of the inn, and our fellow archeologist stepped into the ring of lamplight.

She was a very young archeologist indeed, not over ten years old, with a fluff of yellow hair and a pair of grave blue eyes in a sensitive child face. She held out an enlarged photograph of the incised stone.

"You must look carefully," she explained. "The lines are very faint. But if you examine it closely, you will see a woman like the ones on the ceiling of David's cave."

It was as she said. Barely discernible on the dark surface of the pebble, a woman's shape had been traced—headless, with long pendent breasts, in the same creeping attitude as the figures we had seen only a few hours before. Truly an important find.

"It is Aurignacian," she informed us.

In Dordogne it had amused us to hear the peasants of the neighborhood, who reap a considerable income from the sale and manufacture of "prehistoric" flint tools, talk glibly of "keeled scrapers" and "Mousterian retouch." But that night at Cabrerets not one of us felt tempted to smile at the archeological term on the lips of the little English girl. For as we watched her, bent flushed and serious above her discovery, like young science scrutinizing the age-old problem of man's history, it flashed across our minds that this little colleague of ours, far from being twenty years behind us, had in reality the advantage of twenty years to come, in a science still so young as to belong almost entirely to the future.

CHAPTER XIV

TREASURE IN THE VIOLET HOLE

IT was the end of the day at Montardit. The anthropologist, straightening herself from the last sieve, looked out on the October foothills—cornfields and yellow trees, pale against the still dominant green of meadow and slope, and trailing across the shoulders of the Castillonnais, scarfs of snow. In her muscles, now uncomplainingly accustomed to the daily posture, was an ominous ache.

"Rheumatic," she decided. "And if I am like this after only four months, what must have been the state of health of the permanent cave dwellers? Jean-Marie," she called, "you need not fill another sieve. We've done enough for to-day."

Back in the cave the workman, red and straining to the limit of his strength, was plying his crowbar against a huge fragment of fallen rock. Turning her back on the mountains, the anthropologist descended to the edge of the pit. During the last few days the physiognomy of the Violet Hole had undergone a change. The promise of the stone-filled crevice had been realized. Across the back of the cave stretched a low rocky arch, nearly twelve feet wide and at its

highest point not over twenty inches above the level of the excavations. The opening to which it gave access sloped away to the unknown depths of the hill. A passage? Knowledge was coming slowly with the removal of the stones that had walled up the arch, placed there with some obscure human purpose. Jean-Marie's efforts were directed against the last and heaviest of the blocks, lying beneath the archway at an oblique and descending angle from the right spring and rising to within eight inches of the vault, a flat, rectangular rock which quivered at the assault of the bar and rose inch by inch from its damp, black bed. One final pressure on the iron and the block, freed from its age-long prison, cleared the chamber. Jean-Marie straightened, dripping.

"That's enough for to-day," the anthropologist repeated. "There will be time enough to-morrow to clear out the earth under the archway."

When Jean-Marie and the anthropologist climbed to the cave the day following, the clear light of the Pyrenean dawn had not yet penetrated the black descent of the excavation. Darkness swallowed Jean-Marie filling the first sieve; and his companion up by the bright entrance was still busy adjusting her daily seat of plank and sacking when there came a spluttering cry from below:

"M-m-mademoiselle!"

A hand rose out of the pit holding a long bone shaft. The anthropologist gave one look, then flung herself into the seven-foot trench.

"Where did you find it?" she demanded. "Don't touch anything but show me the exact spot."

"Just under the big stone I took out last night." Jean-Marie crawled beneath the arch to place his hand in the depression where the rock had lain. Stretched out full length beside him, his companion searched with careful fingers in the wet, black earth. The fingers closed on something, lifted it cautiously—another shaft, very slender.

"Is it—?" Jean-Marie did not quite dare to articulate his thought.

"Yes, they are human bones, the thigh, and now another leg bone, the fibula. There is every chance that we have come upon a skeleton, perhaps even a burial."

Jean-Marie reached for the smallest pick.

"No indeed, nothing but our hands. If only it were not so dark. Jean-Marie, I'm afraid you will have to go down to the valley to buy candles. And Jean-Marie, hurry."

He did. Still flat under the arch, the anthropologist raised her chin from the earth to greet his return.

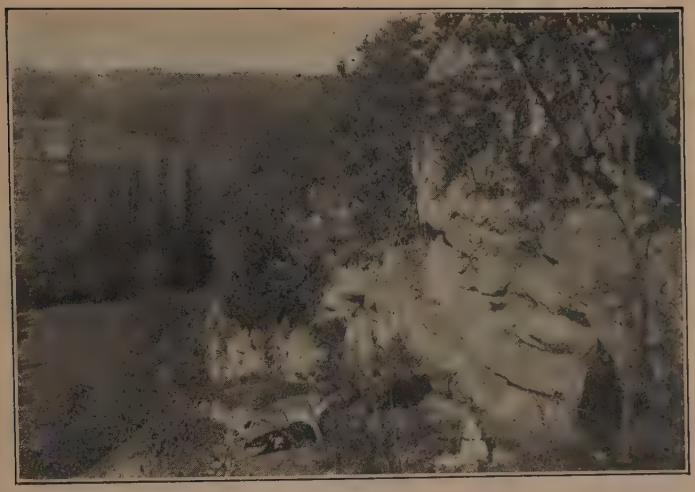
"I have found the other leg and nearly all the vertebræ, but I haven't yet come upon the head."

Taking a lighted candle from the hand of Jean-Marie, she went over the floor of the excavation inch by inch. From the base line of the archway the black earth layer with its snail shells sloped downward into darkness. To the left, where the stone had left a depression, the shafts of human leg bones now blanched, now gleamed red in the varying flame. Two

of them seemed partially crushed by the weight that had lain upon them for indefinite time. In an oblique line pointing towards the right base of the arch the vertebræ uncovered and replaced gave a vague outline of the spine, its precision broken by white splinters of animal bone and clusters of shattered snail shells. Close beside the spine lay the bones of the left forearm. And the skull? Beyond the second vertebra of the neck came a gap. Water filtering through the earth of the layer must have washed the bones of the body away from the head. Here, then, at the base of the arch?

Yes, just there. The probing fingers, brushing back the earth, traced the contours of a skull. . ... He lay on his right side facing the inner wall, the depths of the hillside. The vault of the skull rested against the springstone, cracked by the weight of earth and stones that had pressed against it, but held in articulation with the back of the head by the earth that filled its cavity. Fallen forward beneath the archway lay the lower jaw.

Had some old hunter crept in to die there alone, in the litter of refuse that lay about a hearth? Before the removal of the skeleton and the sifting of the earth, one could not be sure, but there were already indications that pointed to a more formal grave. Around the body, roughly outlining the form, were numerous water-smoothed river *galets*, suggesting burial in a tomb rude but definite. Just beside the skull a particularly smooth and symmetrical stone seemed to have been placed with a care that had not, however,



JEAN-MARIE BEFORE THE ENTRANCE OF THE VIOLET HOLE

BURIAL CHAMBER OF THE AZILIAN MAN OF MONTARDIT

extended to the removal of a large vertebra of wild ox that lay adjacent.

It was very still there at the bottom of the pit, still and dark. The dead, with his head turned far away from the candlelight, lay as if he were not yet aware of the two behind him—Jean-Marie's peasant eyes round with wonder but his professional hand itching for the tools forbidden by the stern young woman bending over the skull a face streaked with mud and perspiration while she hummed a tender little song of

"Salient supra-orbital ridges;

"Mesocephalic—maybe."

But eventually cold wet mould can dampen even the most scientific ardor. Suddenly they began to realize that before the threshold of the tomb flat soil extended only from chin to waist and that for a good two hours the rest of their forgotten anatomies had been inclined upwards against a painfully undulating bank of earth and stone. With chill groans they sank and rose into aching normality. The anthropologist gave a last shuddering stretch.

"I am going down to the village," she announced. "Don't let anyone see the skeleton."

At her insistent knock the postmistress unlocked the telegraph office.

"*Trouvé une squelette humaine entière* [found an entire human skeleton]," read the message sent over the wires to the Catine. Her errand accomplished, the anthropologist climbed to the cave again, serenely confident in the discretion of the state telegraph service

and totally unaware that the grammatical error contained in her dispatch—she had unwittingly put the noun and all the adjectives in the feminine gender—was already making the rounds of the entire *sous-préfecture* to the unmixed joy of any number of mail clerks.

An hour later she was joined at the *Tuto Bioulеto* by a second member of the Expedition. There was a rush of questions and answers, and a second careful inspection of the bones beneath the arch.

"Do you realize what this may mean?" Leaning on their elbows, the two workers surveyed each other gravely in the flickering light of the candle. "That is, if the tomb is undeniably Azilian?"

"Yes, this will be the first Azilian skeleton found in France. To be sure, there are the skeletons from the Portuguese shell heaps and the nest of skulls at Offnet in Bavaria; but unless we find some new culture within the tomb itself, different from the flat harpoon and the thick little scrapers, these bones will represent the first known member of the race that came into France between the Old Stone Age and the New. It is the most valuable document we could possibly have found."

"We will have to decide whether to take up the skeleton or to leave it in place and call French scientific authorities to identify the stratum."

"Just as soon as Paul arrives . . ."

But long before the third member of the party had put in an appearance, there remained but one possible

solution to the problem of when to remove the skeleton. For visitors began to arrive—the blacksmith and his dog, Jean-Marie's father, two rural mail carriers and their wives, and last of all the priest. How had the news been spread? Neither of the two excavators had spoken to anyone in the village; of Jean-Marie's discretion they were certain. How then—? The telegram, of course! The postmistress had told.

She had indeed. But it was not the news of the skeleton that she had rushed forth to cry through the village. It was a little discovery of her own.

Mademoiselle had actually written on a telegraph blank: *"J'ai trouvé* une *squelette,"* and everyone knows that *squelette* is a masculine noun. It is doubtful if more than half of everyone in Montardit had been fully aware of this vital truth, but when it was brought to their attention by a woman of education, they exclaimed with horror or humor, and, as the blacksmith announced,

"We have come to see . . . the Lady."

"The Lady? That is perhaps anticipating. There are only a few bones which we think are human," he was assured.

"Yes, just a few bones," echoed the anthropologist.

But this was more than Jean-Marie could bear. He was capable of guarding utter silence regarding the secrets of the Violet Hole, but to belittle the subject once it had risen was a different matter.

"Vous . . . vous savez," he burst forth, *"il est beau."*

There was a general movement towards the excavation, a movement which Jean-Marie succeeded in checking, or perhaps it was the uncertain light of a candle slanting across the grave. At any rate, no one descended farther than the rim of the trench.

It was now the turn of the *curé* to contribute an idea.

"This is not the first skeleton to be found at Montardit," he remarked. "When they were repairing the church, they dug up two individuals under the old fortification wall. They brought them to me, as was fitting, and I gave them Christian burial."

The moment of uncomfortable silence that followed his words was broken by the arrival of Paul. In a whispered conclave at the bottom of the excavation we decided to proceed immediately to the removal of our find.

"Better for science that it be done by us than by some small boy of Montardit."

"Or by the advocates of Christian burial," remarked the anthropologist with evident nervousness.

With tape, spirit-level, and notebooks we set to work to map the position. Then came the disinterment. First the leg bones—an unbroken femur, tibia, and fibula, both heels, a few foot bones, the others having doubtless been carried away by water, for here the grave slope was most pronounced, the thighs lying seven or eight inches lower than the head. Scattered fragments of pelvis mingled with bones of the lower arm; ribs in all states of completion, the sturdy borders

of the otherwise vanished shoulder-blades; the collar-bones, one perfect, and almost an entire spinal column from the axis to the lumbar region where deep hollows and irregular protruding margins of the vertebræ showed the wear and rheumatism of an old person who had lived much in caves. Last of all we lifted the head from its stony pillow. It was a small skull with prominent ridges of bone above the eye sockets—judged superficially, a small old man with various primitive qualities, many of which characterize the mountaineer of to-day; nothing ape-like, no Neanderthaloid reminiscence—modern man.

All these precious fragments we laid in a basket covered with sacking. It was nearly night by the time we had finished, and remaining fragments, invaluable for the possible reconstruction of shattered bones, we were forced to leave, together with whatever cultural mysteries the grave might contain, for the next morning and our sieves.

That night, in the traditional if not extraordinary champagne of Ste. Croix, we drank to the Man of Montardit.

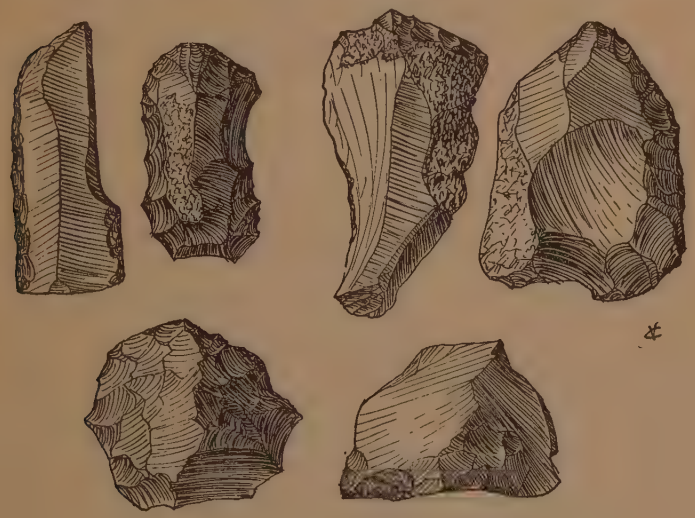
* * *

Two days later we assembled the bits of history, of custom, religion, life and death, that the tomb had yielded. The earth itself, thick with snail shells, charcoal, and kitchen refuse often burned red and black, showed no divergence from the entire stratum of virgin soil. The animals represented—red deer, wild cattle,

wild goat, boar, marten and wild cat, small rodents, frogs—included no extinct species of the late Paleolithic period, and yet no domestic dogs, sheep, or cattle of the New Stone Age. It was the usual Azilian fauna. Throughout the earth were sprinkled chips from split hearthstones. There were eighteen river *galets,* some, perhaps all, brought from the Volp to outline the grave. Three flat stones had covered the feet, two roughly rectangular; the third, flecked with mica, showed traces of charcoal and of red color. Then came a group of objects which tenderness or tradition had placed with the dead: two granite hammerstones deeply scarred; the anvil on which their blows may have fallen, dented and also marked with red; and a large crudely shaped flint approximating a scraper, the largest found in the Violet Hole. With these tools, all perhaps that a community poor in workable stone could spare, there was one ornament—two deep scallops cut from the tusk of a wild boar. Two other thin fragments of tusk denoted a possible second ornament. Perhaps, though, this was not the sole proof of the æsthetic sense of the Azilians of Montardit. We gathered also an enigmatical collection of fragments foreign to the cave itself—morsels of glistening quartz, two symmetrical *galets,* a few curiously shaped pebbles, and a stalactite cut through the middle.

That was all. But it was enough to tell us many things about the Man of Montardit. A poor man hunting the deer and wild boar, bringing them home to cook in the *Tuto Biouleto,* fashioning implements from

flint scanty and flawed, in a manner far less finished than that of his Paleolithic predecessors. No artist, but with simple desires for ornamentation. Living and dying in the cave facing the mountains, and in the end lying there in a grave marked with care, his tools



AZILIAN FLINT TOOLS FROM THE VIOLET HOLE

Actual size.

beside him with other things sacred or cherished that he might carry their spirit into that other world his soul had entered.

We were to know much more in the days that followed; for now, as we descended, we unearthed more of the distinctive implements of the Violet Hole. The two thick little scrapers we had found on the threshold

of the grave became part of a series of ten, all of the same workmanship and several cut in a smoky flint with traces of crust which suggested importation from the far-off flint country of Dordogne. We found three

AZILIAN STONE PENDANT AND BONE POINTS
FROM THE VIOLET HOLE

Actual size.

bone points, one crude, two of finer workmanship; and finally the only certain "jewel" of the *Tuto Bioudeto*—a tiny flat pebble, curiously streaked, which had been pierced for suspension. In time, the ring worn through, the little pendant fell from its leather string and was lost—for more than ten thousand years.

Treasure in the Violet Hole

While we eagerly collected details for our picture of the Man of Montardit, Jean-Marie pursued his fixed search for the Northwest Passage. Ten days after the discovery of the grave, and thirty inches deeper, we uncovered a second archway. Jean-Marie was radiant.

"At last the Indies," laughed the Expedition as we bent over our sieves.

There was a splutter from the trench.

"Nom de nom!" proclaimed Jean-Marie. "Another skull!"

Beneath the inner archway lay a yellow bowl of bone, undeniably human. Although it was in a state of preservation much fresher than that of the higher grave, only the brain case remained. Days after, we found a warped piece of the forehead at a distance of six feet, of a totally different color and showing a break infinitely old. This, coupled with the fact that nothing else of the skeleton except a collar-bone, a kneecap, and various portions of hands and feet were ever uncovered, pointed to very early disturbance of the burial, perhaps by wild beasts.

But if the second skeleton could add little to our knowledge of the race that had inhabited the Violet Hole, the grave itself greatly enlarged and clarified our vision of their life. Here we found repeated with greater emphasis the ceremonial details of the first burial. The outline of encircling *galets* was more precisely marked in the black earth—an old hearth site full of charcoal, snail shells and kitchen refuse; the shining quartz fragments multiplied; the same big

crude piece of worked flint was present, together with hammerstones in profusion. A piece of red sandstone with a cup-shaped depression marked on its upper surface was our first example of the *pierre à cupule* used in mixing colors or grinding points throughout the Old Stone Age. In addition to several granite hammerstones a flat *galet* showed marks of similar usage; another *galet* had been split with curious intention on both flat surfaces. But particularly interesting were the stones showing traces of paint. The largest granite hammerstone bore marks of black and red; a flat *galet* had been entirely covered with red paint; and a thick beige *galet* showed smears of red evidently applied with the thumb. Although there was no clear evidence of the patterned bands and dots that form the enigmatical symbols of the pebbles of the Mas d'Azil, still the technique of color application and doubtless the impulse were one.

In the second grave we also found small bits of flint. Beside the skull we discovered a tool—a scraper chipped on the end of a slender blade, and within the tomb itself we gathered a half-dozen fragments.

We carried the bones to the Catine, this time quite unobserved, for Montardit had reverted to the age-old attitude that it is not wise to trifle with the dead. Since the first day, when curiosity or incredulity had driven them up the hill, few villagers had visited the Violet Hole; and it was at that time that Moïse, our cook at the Catine, formed the habit of sleeping at the neighbors'.

But those two other men of Montardit rested as quietly in their baskets in the wine-cellar as ever they had lain in their stone-encircled graves. Their repose was hardly so prolonged, however. Trains and taxis awaited them, a Paris apartment, and finally the laboratories of the *Muséum d'Histoire Naturelle* where, guided and directed by the greatest prehistorians of France, we were to study and judge this paradoxical vanguard of an unknown race.

For on the morning when our candlelight fell on the first grave under the archway, we discovered one of the men who fashioned the flat harpoons and the painted pebbles of the Mas d' Azil, the men who came into France just before the dawn of the day of herds and meadows, the life we know.

To that life, to its human composition, he contributed his vital part that goes on within us to-day. We had found our ancestor in the Violet Hole.

CHAPTER XV

THE MAN OF MONTARDIT

AND the Man himself? To what race did he belong? What human type did he represent?

It took no second glance at this sturdy little Azilian to prove that, whatever his contemporary affiliations, his simian ancestry—in terms of evolution—was as remote as our own. Above his brow ridges, strongly marked but in no way suggesting the chimpanzee's bony bar, his forehead rose in a distinctly human curve. The entire skull, though somewhat smaller than that of the average modern European, was accompanied by a jaw in harmony, which was supplied with those two exclusively human characters, a well-developed chin (whose scientific name is "mental prominence") and on its inner surface the bony processes for the attachment of the tongue muscles that are generally believed to be so closely associated with the power of human speech.

Like his skull, the limbs of the Man of Montardit showed no retention of ape-like proportions, the arms in relation to the legs reaching no extraordinary length, and the muscular development displaying ultra-human characters. For the long bones are those of a primi-

tive man, primitive in the sense, not of evolution, but of function and diet. The little-used leg bones of gorilla and chimpanzee are smooth, unbroken by ridges for muscular attachment. To this same condition the femur and tibia of modern civilized man approach. But in primitive man, whose use of his limbs is more strenuous and more constant and whose food supply is less certain, these bones are not so robust, but they are marked by high ridge and deep depression for the attachment of the powerfully developed muscles of calf and thigh. In this characteristic, then, the Man of Montardit stood farther from the apes than we, but perhaps a more just comparison is between the bones of the domestic and the wild animal—the limbs of the stall-fed ox are heavy and smooth in contrast to the lighter, rougher bones of its precariously nourished wild brother.

Another feature of our Azilian's long bones that also falls within the category of primitive was the curve of the femur and the backward tilt of the head of the tibia. Modern savages in general, men who walk habitually over uneven ground, do not extend the leg in walking as freely as we do. The knee is always slightly flexed, so that in time the thigh becomes a bit bent. Such a condition would tend to produce a weak bone if Nature, according to custom, did not supply a compensation. Thus on the interior of the curved femur appears a strong reinforcing platform of bone. But this character of the thigh is not strictly limited to men of civilizations different from our own;

it is represented in at least one of our own groups, the mountaineers. For the same natural causes produce here the same functional changes in men. So we see the Man of Montardit not as someone lower in the scale of physical development than we, but rather specialized for his life of mountain hunter and fisher.

He was a short man, only about five feet two inches in height, but taller than the Magdalenian man of Chancelade, his nearest contemporary on the soil of France. In contrast to that other almost giant race of late Paleolithic men, the Cro-Magnon, he was, however, extremely small, nearer to the short, dark peoples that one finds to-day in more or less pure state on both sides of the Mediterranean.

As for that more fundamental but much disputed criterion of race, the cephalic index, our Azilian presented an interesting feature. Most of the men of the Old Stone Age are dolichocephalic, long-headed: that is, the breadth of the skull is less than 75 per cent of its length. In the Man of Montardit this proportion is 76, just over the line into another group, the mesocephalic, medium-headed, which suggests the intriguing question of new-coming peoples with shorter heads (with possible intermixture of types) already raised by the culture of the Azilian epoch, so clearly differentiated from the late Paleolithic civilization.

So much we can speculate from a general human and racial point of view. But what of the Man as an individual? We know that he was old. The almost complete obliteration of the sutures between the skull

REMAINS OF THE AZILIAN MAN OF MONTARDIT

The skull in front and top views, femur, tibia, and both ulnæ, the one on the right showing signs of injury or disease.

bones, a condition of old age, told us this. The depression of the bodies of the vertebræ and the extreme wear of the teeth added the same testimony. This usure of the teeth was unlike our own—the enamel departed from long years of attacking tough objects, many teeth lost in life, traces of abscesses on the jaws, but in the remaining teeth no cavities formed from decay. This also is a condition found often among peoples more primitive than we.

We are also certain that long before his death something unpleasant had happened to his left arm. Perhaps he met with an accident not uncommon, one would imagine, among cave dwellers. He may have broken his arm. If so, someone (the medicine man, his wife?) had set the bone by a method crude perhaps but so efficient that the ulna (the inner bone of the forearm) knit with little thickening and almost no shortening. Careful observations, however, seem to indicate some inflammatory disease, and the bone is now being X-rayed in the hope of more definite knowledge. We suspect, too, from the marginal outgrowth of the lowest lumbar vertebra, that he suffered painfully from rheumatism.

There he is, then, our Azilian of Montardit, his head form suggesting the new element that his people brought into France, all his physical characteristics proclaiming that he had arrived, the little old hunter of the Pyrenees, a modern man of more than ten thousand years ago.

Modern man, so long ago! And by what longer,

what devious route had he traveled to reach that stage? Once we saw the way not short, but clear: amœba to far-away mammal; the primates, lemur, monkey, anthropoid ape, ape-man, man—a long road but a straight one. Now we know that evolution is no such simple, orderly business. The trunk of our family tree which we share with the apes still stands deep-rooted in our scientific knowledge, but it is a tree of much fuller growth than we once believed. Many branches go off at irregular intervals, reaching varying heights; little shoots start and stop.

All of our slowly increasing anatomical and physiological knowledge of the four great anthropoid apes makes our kinship clearer; we are more and more certain that by their side man developed his parallel course. The modern great apes are restricted to the old continents. Asia is the home of the gibbon and the orang-utan, Africa the haunt of the more "human" gorilla and chimpanzee. For their ancestors also we must look to the Old World. Fossil apes (like fossil men, rare and fragmentary) have been found in India, in Egypt, Greece, Italy, and southern France. No fossil apes, no fossil men, have been discovered in North or South America. In Asia and Africa, the two great continents where, we believe, lies buried the history of our being and that of the other primates, no extensive explorations have yet been carried on, but chance has already given us indications of their hidden possibilities. On the island of Java the remains of *Pithecanthropus erectus*, the ape-man, were brought

to light; a strange, aberrant Neanderthaloid skull has come from the Broken Hill Mine in Rhodesia. Time —not our own—must complete the story.

What do we know to-day? We are certain of our common ancestry with the anthropoid apes. Our brains show the same form and convolutions, our dentition follows the same formula, our hands with their power of grasp and the inestimable mechanical advantage of a thumb that can be opposed to the other fingers are the direct inheritance of a tree-dwelling ancestry. As for the foot, that most highly evolved, most human character, the elements are all present in orang-utan, gorilla, and chimpanzee. All can walk to a limited extent. The orang-utan and chimpanzee walk on their knuckles, but the gorilla, the most terrestrial and the possessor of the best heel, walks flat upon his foot. On the physiological side, owing to the difficulty and danger in obtaining living apes and their rapid death in captivity, we know less. Certain things, however, are clear, such as the susceptibility of the anthropoids to human diseases (notably their reaction to inoculations of syphilis) and the identity of the constituents of their blood with that of man which no other animals share. Where the anthropoid apes differ from man in these anatomical and physiological particulars, they diverge as widely from the highest forms of the lower apes and monkeys, often as widely among themselves.

There are two features, however, that set man apart from his simian cousins, the proportion of the upper

SKELETONS OF THE GIBBON, ORANG-UTAN, CHIMPANZEE, GORILLA, AND MAN

All in proportion except the gibbon, which is twice its proportionate size.

to the lower limbs and the relation of jaw to brain. Among the great apes, legs, comparatively speaking, are poor, short, weak things. The finger tips of the gibbon touch the ground, the orang-utan's fall to his ankles, and the powerful hands of all four species are in marked contrast to their feet. The condition of the skull is even more strikingly different from the human type. The small brain case, lost behind the enormous bars of bone over the eyes and the central skull crest, and the gigantic, outstanding jaws with their projecting canine teeth give the impression that has made many a would-be scientist say secretly with Benjamin Disraeli, "My Lord, I am on the side of the angels."

But close examination of the causes of this development of arm and jaw lessens the feeling of our fundamental difference from the great apes. For they are the functional accompaniments of life in the trees. There the arm, organ of support and of locomotion, is all-important; legs must not be too great a weight to swing behind. Under conditions of life where the arm is the main means of locomotion, the jaw becomes the organ of offense and defense. To fulfill this function, it must be massive, and in order to support its weight and facilitate its operation, there must be a tremendous growth of the temporal muscle. In the gorilla this muscle covers the entire cranial vault, drawing up the skull into a median ridge for its attachment and squeezing the brain so that extensive development is impossible. Before maturity, when this growth of jaw

and canine teeth sets in, the skull of the young gorilla —rounded, with forehead which bulges rather than retreats—resembles that of a human child to a degree remarkable in consideration of the divergence between the skulls of the adult gorilla and a man.

That still shadowy creature, the Ancestor of Man, also once inhabited the trees of a far-off world. At some time before he became so highly specialized for arboreal life, as did the gibbon, orang-utan, gorilla, and chimpanzee, he climbed down to the ground. His case was not unique in the simian world. The baboon had done the same, and developed into a four-footed, snouted, dog-like little beast. Our ancestor, however, instead of imitating the inhabitants of his new sphere, took it into his superior head to develop his own best characteristics—that is, to perfect the erect posture already partially assumed in his former habitat. It is this erect posture that explains the greatest anatomical differences between man and the anthropoid apes. Walking on the hind legs freed the arms from the function of locomotion; the hand, now a weapon and a tool, relieved the jaw from its business of fighting and foraging; and the diminishing jaw, with its accompanying diminution of the temporal muscle, gave the brain a chance to grow.

Thus everything is explained except just why our ancestor took to the ground in the first place. Doubtless the reason was largely concerned with food. Giant apes are vegetarians and the supply of plant nourishment is often scarce in the treetops. In fact, it is re-

ported of the gorilla that he is forced to spend his entire day in searching out sufficient fodder for his big bulk. Our ancestor, then, had an appetite backed by initiative, and accordingly he betook himself to a vineyard where the laborers were fewer. It may well be a comfort to Mr. Disraeli's silent followers to feel that if they must own an ape-like forbear, at least he was an intelligent creature.

Of his bones we have yet to find the least fragment. Formerly, when evolution named the gorilla as our direct ancestor, we looked for something in every characteristic half-way between the apes and modern man. And in 1892 we thought we had found it. At Trinil, Java, in a layer of earth laid down before the dawn of the Quaternary era, more than one hundred and twenty-five thousand years ago, appeared the skull and thigh bone of the famous *Pithecanthropus erectus*. From the skull cap (no portion of the face was found) with its remarkably low, retreating forehead, tremendously heavy brow ridges, and a cranial capacity of 850 cubic centimeters, the discoverer named his find *Pithecanthropus*, the Ape-Man. The cranial capacity of the largest gorilla is approximately 550 cubic centimeters; that of a normal human being is never less than 1,000, the modern European range mounting from 1,100 to 2,000 and centering just under 1,500. Hence, on this and various other cranial characters, the name was justified. But there was another contradictory feature—a thigh bone overwhelmingly human found in association with the skull. Hence the word *erectus*

was added to the name—the Ape-Man Who Walked Upright.

Since the day of the discovery scientists have grouped themselves around these three theories: *Pithecanthropus* was a giant gibbon; *Pithecanthropus* was an intermediate form; *Pithecanthropus* was a true man. There remains a fourth possibility; that the ape-like skull and the human femur are parts of two separate individuals; but that chance would place parts of these two different animals side by side is harder to believe than that *Pithecanthropus erectus* was a creature which had assumed the erect posture but retained his simian cranial characteristics. He is not in any case an intermediate being, in all respects midway between man and the apes; not in all probability ancestral to modern man. Like his successors—the Heidelberg man, the Piltdown man, and the race of Neanderthal, he is much nearer to the apes than we, but possesses along with features markedly simian certain characters—characters differing in each type—that are of the most highly human quality.

For the complex of evolution does not progress in unity. Rather, it is asymmetrical. Certain parts advance, certain parts lag behind. Thus *Pithecanthropus erectus* of Java, with the lowest skull and heaviest brow ridges that could warrant "human" speculation, walked upright upon a thigh as straight and as long as that of modern man.

So, too, in glacial England the man of Piltdown paired his fully evolved human skull with the project-

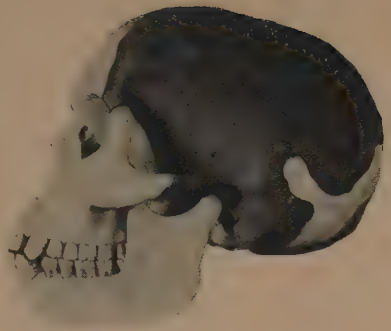
ing canine teeth and chinless jaw that half the scientific world assigns to a fossil chimpanzee. The portions of the skull found in the Piltdown gravel pit are enormously thick but otherwise show no qualities that accord with any stage lower than actual man. The final reconstruction, made after a long controversy, gives a cranial capacity of 1,300 cubic centimeters, the average for several modern primitive groups. But the characteristics of the lower jaw are contrastingly ape-like—long, narrow, chinless, with a canine protruding above the other teeth in a bestial manner. Again rises the question: Is this the chance association of two different animals, a fossil chimpanzee and a fossil man? And again the answers differ. In general, after fourteen years, the burden of belief inclines towards the unity of skull and jaw, and in Piltdown man, as in the much older *Pithecanthropus*, we have a being of contradictions in whom the brain grew before the entire shrinking of the jaws, another of Nature's variations on her own plan.

Then there is the striking case of the Heidelberg jaw. Found at a depth of seventy-nine feet in the Mauer sands—older than the Piltdown gravels, this is the earliest remnant of man in Europe. The jaw itself is extremely large and heavy, absolutely chinless, ape-like. But it is the teeth that give it its extraordinary value as a human document. For already the tusks for defense have disappeared; the canine teeth do not protrude in the slightest degree above the dental arcade, and the molars, where they differ from those of

modern man, diverge in the direction of herbivorous animals rather than the apes. As we have already seen, the clear stratification and the animal remains of the Mauer sands place the Heidelberg man definitely in the first archeological epoch of the Old Stone Age, the Chellean. The man of Piltdown is generally considered later, between the Chellean and the Acheulean. Already at this far date, we have two different types of men, neither of which was ancestral to our own. All this pushes our origin farther and farther back into the dim ages that we once considered consecrated to *Dinotherium* and *Hipparion*.

Of the descendants of the man of Piltdown we have no trace, but the Heidelberg man seems clearly parent to the famous race of Neanderthal. Neanderthal man, last of the simian human types, survived late in Europe. He came in at the beginning of the Mousterian epoch, the period of cave dwelling, of flints varied and well worked, of the first implements of bone. He went out with its close. But though his culture follows directly upon the Chellean and Acheulean of the men of Heidelberg and Piltdown, in duration of time those two epochs were infinitely longer than the combined span of all the other archeological divisions—Mousterian, Aurignacian, Solutrean, Magdalenian—that made up the Old Stone Age. But in his little day of fifty thousand years, Neanderthal man lit his fires in the caves and rock shelters all over western Europe. Remains of his unmistakable form, ranging from a handful of peculiarly distinctive teeth to complete

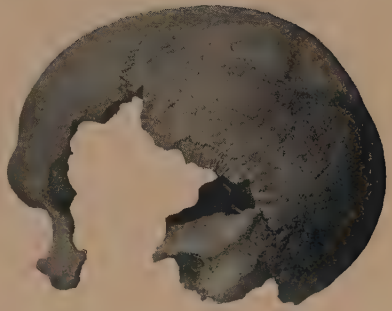
Piltdown Man



The Old Man of Cro-Magnon

Neanderthal Man

The Man of Montardit



SKULL OF THE AZILIAN MAN OF MONTARDIT COMPARED WITH THREE MORE PRIMITIVE SKULLS.

Photographs of restorations furnished by the American Museum of Natural History.

skeletons, have been exhumed from the Channel Islands to Croatia, from Belgium to the Rock of Gibraltar.

The type of the man of Neanderthal is more or less popularly known from the frequent misuse of his name in the daily papers and his highly colored "portraits" that illustrate the misconceptions of Mr. H. G. Wells. His was doubtless not a handsome figure. He was short and heavy with a barrel-shaped chest, and the pronounced bowing of the thigh bone, an exaggeration of the condition present in our Man of Montardit, signifies a posture erect but with knees always slightly bent. His enormous brows and projecting face, relatively chinless, were carried by a long, low skull hafted far back on a bull neck. But there was nothing in the least ape-like about the proportion of arms to legs, and the capacity of the skull was above the modern European average. No bestial canines projected from his heavy jaw, and the chin showed a development midway between his possible ancestor of Heidelberg and modern man. The inner surface of his lower jaw, bears, it is true, certain ape-like features but there are also present those processes for the attachment of the tongue muscles which deny Wells' statement that Mousterian man was speechless. With his large brain, simpler but in no essential different from our own, he conquered his damp, difficult environment and survived in Europe until the end of the Mousterian epoch, when, with that of his civilization, his disappearance coincided—probably not fortuitously—

with the arrival in France of the superior Aurignacian culture and modern man.

Of the various contradictory forms of early man that evolved far apart in time and space—*Pithecanthropus erectus* of Java with his ape-like skull cap and human thigh bone, the man of Piltdown—human skull and simian jaw, he of Neanderthal—big brain but brutal brows and jaw, this last alone lived on into the days of our ancestors. But there is no sure evidence of intermixture, no reason to believe that he is in the line of our descent. Like the others he is one more of Nature's failures to evolve man from the common anthropoid stock.

While the Neanderthal man was still the dominant factor in European life, modern man, as fully developed as to-day, was existing almost at his side. The proof of this statement, with all that it implies of multiplication of Gardens of Eden, lies in the fact that in the borderland between the Mousterian and Aurignacian epochs, we find the Grimaldi race in the cave of Mentone and, close upon their heels, the Cro-Magnon peoples all over western Europe. Two groups of highly evolved modern man already as strongly differentiated as the Scandinavian and the Mediterranean of to-day, with a civilization including a brilliant stylized art, gave birth to these physical and cultural possibilities somewhere—Asia, Africa?—during the same long, slow ages when the poor Neanderthal relation was plodding about western Europe. Again the date of our origin recedes into the infinite past.

Then begins the unbroken history of modern man in Europe. Civilizations may alter, the brilliance of the Magdalenian art shrink to the painted pebbles of the Mas d'Azil, the New Stone Age of flocks and fields be superseded by the ages of bronze and iron. Man's head form may change from long to short, his stature rise or fall, but the heavy curved thighs, the simian brows and tusks, are gone forever.

Of the men of the Old Stone Age with whom we can claim kinship, the earliest found on the soil of Europe are the old woman and youth of the caves of Grimaldi, in northern Italy. They were found buried in a layer of very early Aurignacian, if not Mousterian, age, and show clear affinities with a definite branch of modern humanity. The extremely long and narrow skulls, the flat, wide noses and prognathous profiles, the marked length of forearm in relation to upper arm and of leg to thigh—all these are Negroid characters. Not that the race of Grimaldi were Negroes, but rather they possessed in a more striking degree that strain which entered early into all those peoples that we call Mediterranean—Egyptian, Arab and Berber, Spaniard, Italian, and southern Frenchman, and, spreading northward in the Stone Ages, contributed the basic racial characters of the ancient peoples of the British Isles.

Higher up in the same cave of Grimaldi, in layers clearly Aurignacian, were unearthed a series of skeletons of the race of Cro-Magnon. This name, arising from the rock shelter of the Dordogne where the type

was first established, christened what was hailed as the first example of *Homo sapiens,* Thinking Man. The Cro-Magnon men and women were tall, many over six feet, with strong limbs. Their skulls were larger in all dimensions than the average skull of to-day, but still of the dolichocephalic form of their predecessors. With their long, narrow heads was associated a short, broad face with low orbits and a narrow nose. Into the Europe of their period they brought their fine, vigorous bodies, fitted for the pursuit of horse and mammoth, of bison and reindeer, and their intellectual force and clarity which brought forth the astounding art of Gargas and David.

Fewer men of the Magdalenian period have as yet been revealed to us. The most interesting, the man of Chancelade in the Dordogne, like the race of Cro-Magnon, is dolichocephalic with a large cranial capacity, but the extreme height of his forehead and the shortness of his stature mark him as a member of a group apart. But the distance is not great, no more noteworthy than that of men who dwell side by side to-day, and the types of Chancelade, Cro-Magnon, and Grimaldi still persist among us.

But modern European man shows no such homogeneity of cephalic index. Our average is higher; we are, in the main, mesocephalic with an ever-increasing tendency towards the brachycephalic (short-headed) end of the scale. At what point in our racial history was this short-headed element introduced? Who brought it into Europe?

The Man of Montardit

Formerly, when the break between the Old Stone Age and the New was believed to be complete, leaving Europe an unpeopled continent during unknown thousands of years, we said confidently that the first short-headed immigrants came with the Neolithic Period. Then in the cave of Mas d'Azil came to light the thick scrapers, the flat harpoons, and the painted pebbles between the Magdalenian culture and the New Stone Age; there followed the pygmy flints of Fère-en-Tardenois; finally, these flints with harpoons at Maglemose in Denmark. From these stations no ascertainably human remains have come down to us, and it is from two other areas that we have gleaned some idea of the man of the transition. At Offnet in Bavaria was found a curious nest burial of more than twenty fragmentary skulls, smeared with red ochre and adorned with pierced sheils and the canines of the stag. In the shell mounds of Mugem, Portugal, several skeletons were discovered with the Tardenoisian industry. And both groups reveal the same surprising feature—the long-headed men of the Paleolithic Period, new short-headed men, and the mesocephalic mixture of these two types. In France, where this fragmentary epoch, like all the other prehistoric ages, is present in its greatest variety and in its highest development, no representative of the race had ever been discovered. Then came our mesocephalic Man of Montardit to complete the picture.

So it was at this moment that there entered into western Europe the physical element that was slowly

to penetrate everywhere and dominate often. In the Neolithic Period the old dolichocephalic peoples still held their balance. Within the dolmens, the rock tombs of Neolithic France, the long-headed skulls are still twice as numerous as the combined short and mixed types, but each succeeding age has brought an increase of the brachycephalic "Alpine" head form, partly from eastern immigration, but also because in intermarriage with a dolichocephalic strain it tends to dominate in the resulting cross. It is claimed that during the last fifty years European short-headedness has been steadily increasing. To these champions of the long-headed "Nordic" this is a tragedy; to those who remember that along with short heads there came into Europe the cattle and the seeds that, through stability of the food supply, gave us the time to develop our so vaunted civilization, there is occasion for fewer tears.

Modern industrialist, Neolithic farmer, Paleolithic hunter. And beyond? The road is long, many-forked, and our directions few. All we know is that once there lived forms of men much nearer to the apes than we, and that with each new discovery our separate, essentially human origin moves farther and farther away towards the beginning of life. Here, until we find more of the precious ancestral remains of man and of his blood kinsmen, the great apes, our knowledge rests.

Infinitely nearer to us in the light of this far conception of our birth, but still more than ten thousand

years away, stood the Man of Montardit, just at that point where human forms were multiplying in all their modern complications and intermixtures which make every one of us a continuous part of the men of the Old Stone Age.

THE MOUNTAINS AND MONTARDIT FROM THE ROAD TO MAS D'AZIL

CHAPTER XVI

SEASON'S END

THE time had come to close the Violet Hole. Summer and sunny autumn were at an end. Along the still road the pulse of the mill beat loud in the sharp air. From the hillside came cries of "Ha-a, Castà, Mascaré!": farmers had begun the winter plowing. The morning grass was stiff with frost, and across the valley the dark peaks of the Castillonnais were overspread with snow.

But still we lingered. For weeks we had pushed our trench downward against the real wall of the cavern. Twenty feet below the original level of the excavation we were still working in the culture layer that we had identified as Azilian. The industry remained identical; we had found twenty additional thick scrapers, a miniature knife blade, and a round, flat scraper of classic Azilian pattern. Nor had the fauna changed.

And yet the nature of the stratum showed certain subtle alterations. The cavern floor was no longer a vast fireplace. Hearths were isolated, charcoal and kitchen refuse thickest against the right wall of the cave. The wild boar had almost entirely disappeared, but we uncovered bones of the red deer in constantly

increasing numbers. The quantity of snail shells diminished astonishingly and they were limited exclusively to hearths, a fact which seemed to favor the theory that the Azilian population of the *Tuto* had utilized snails for food.

Were we approaching the end of the layer? Would we find beneath it the clay of the cave bottom or the hoped-for Paleolithic stratum—Magdalenian or Aurignacian, the archeological sequence of our Azilian?

We abandoned the left half of the trench, confining our efforts to the right. Our excavations became a pit, four feet by four. We worked furiously now, determined that neither cold nor damp should drive us from the cave until we had uncovered the solution of the problem.

Inch by inch the pit deepened. The layer had become very hard; we removed it in blocks—bones and earth welded together, stained red and black with coal and ochre. Sieves were out of the question; it required our hooked tool, occasionally supplemented by a mallet, to break up the blocks.

"It sounds curiously hollow."

We stood at the rim of the pit. Below us Jean-Marie with his miner's lamp worked away in a space barely wide enough to swing his tool. Each blow fell with a muffled sound as if the echo were prolonged through empty chambers underground. Were we at work upon a vault of breccia formed by some ancient landslide, stretching a precarious arch above a pit, like the pit of Contrazy? And would a final blow of

the pick send us crashing down with tons of earth and rock to the Volp a hundred feet below? Not a reassuring thought. We considered the vertical rear wall of the cave, of which we had uncovered some fifteen feet, from vault to excavation, since the discovery of the skeleton.

"Better sound the bottom with a miner's bar before proceeding further," we counseled.

While Jean-Marie procured the necessary tools at the village, we returned to our task of breaking up blocks from the trench. Here a surprise awaited us. In a close-packed lump of earth and ashes one of us found two teeth.

"Deer," he commented, and was about to toss his find into the basket of animal bones when our osteologist caught at his hand.

"Let me see."

Carefully she brushed away the clinging earth, turning the specimens over and over in her fingers as she examined the folds of enamel. Then came the verdict:

"Reindeer—a lower premolar and an upper molar. Belonging to two individuals, one young—the tooth is barely worn—and one old."

This was an important find. Reindeer, though very rare, had been found in the lower Azilian layers at the Mas d'Azil. Its presence in the Violet Hole furnished another proof of the authenticity of our layer and seemed to indicate that we were indeed approaching the bottom of the stratum.

When Jean-Marie returned from the village, we pro-

ceeded to sound the pit. At the left of the excavation the iron bar was driven into the earth for fully a yard —no interruption of the layer there. At the right, along the cave wall, it encountered rock; we would be forced to adopt another method of sounding. Dispatching Jean-Marie to the Volp for a pail of water, we gave our attention to the side of the pit nearest the front of the cavern. At the foot of the slanting earthen wall of the excavation, nearly twenty-four feet high at that point, lay imbedded a row of sizable fragments of limestone, fallen from the vault. One of these, ten or twelve inches in depth, we pried loose with the bar. Underneath showed a flat yellow surface—clay.

In a few minutes we had uncovered a square yard of the new stratum, which shelved abruptly towards the back of the cave.

"Here ends the Azilian period." Working away with pick and bar, Paul filled our baskets with fragments from the yellow layer which we carried up into the daylight to examine. Blocks of clay, streaked with charcoal and bristling with splintered animal bones, highly fossilized. We had found a hearth. Nor were flints lacking: our basket yielded three knife blades, a slender flake with a scraper at the end, and two little nuclei which had served as scrapers—all of opaque white flint radically different from the semi-transparent Azilian tools. In material and workmanship they were identical with implements we had found in the Magdalenian layers of the Mas d'Azil. The

animal bones, too fragmentary to admit of identification, we discarded. But among them were the leg bones of a ruminant which proved to be a variety of wild sheep very rare in the region, and those of a long-legged fox similar to remains found in Paleolithic deposits in the caves of Grimaldi.

We had uncovered the true Paleolithic. Its excavation would belong to a new season; since we were certain that it was there, we could begin work up by the entrance and proceed towards the back of the cave, removing the Azilian stratum as we advanced. To continue work in the pit was impracticable for two reasons, the lack of space and the risk presented by the wall of earth eight yards high, which might cave in at any moment. For the time being, however, we had only to stay it with supports before closing the cavern for the winter.

While we examined the clay from the Magdalenian hearth, Jean-Marie had been busy in the bottom of the excavation. A sudden cry from below interrupted our discussion.

"*Venez vite!*" Jean-Marie called. "There is a new hole!"

Hastening down the steep slope, we took up our stand under the second archway, on the brink of the deepest portion of the trench. Below us, kneeling beside his lamp, Jean-Marie explained the reason for his summons. He had poured his pail of water into a depression where the right wall of the cave joined the rock at the rear. With a gurgling sound it had been

sucked out of sight in a few seconds. At this Jean-Marie had set eagerly to work. First, a layer of earth and ashes, several inches in depth, with two big fragments of limestone close against the rock wall, almost touching the surface; between them, a crevice through which the water had disappeared. Using the bar as a lever, Jean-Marie pried the big stones away from the rock. On the side towards the cave they were black with the smoke of many fires. And behind—

"Voyez!" His arm disappeared up to the shoulder. One by one we slid down the vertical side of the pit. Crowded in the narrow space at the bottom, we peered into a dark hole lighted by the still flame of a candle which Jean-Marie held at arm's length in the opening. At a level with our eyes we could just make out the curve of a vault extending forward and down into the darkness. Beyond a fan-shaped cone of débris that choked the opening, we caught the dim outline of a lofty corridor.

"That hole was blocked intentionally." Paul pointed to the two limestone fragments, their surfaces flaked and blackened with the heat and smoke of Azilian fires. Beneath our feet the layer of hearths continued. Why had they closed the entrance? What lay beyond the barrier of stone and ashes?

Half an hour later we wriggled feet first through the passage Jean-Marie had made in the débris beneath the vault. Sliding down the cone of earth that water and pressure from above had forced between the rocks

that barred the opening, we found ourselves in a narrow corridor, not over a yard wide but four or five yards high, out of which opened two galleries. We chose the gallery to the right. It wound away into the heart of the hill, lofty and narrow, its walls yellow with a damp clay coating, and underfoot the same clay repeated the curve of the vault overhead as if it had at some time fallen from the roof.

We came to a chamber, water-marked at its base, the walls white with stalagmite. At the left two low galleries coiled away into the darkness. Beyond the chamber a wall of clay, fifteen inches wide and a yard high, blocked the base of the main passage. We examined it closely. Had it been made by hands? No trace of fingers on the smooth surface. We climbed across. Twenty-five yards farther, another chamber choked at the end by a landslide, the source of which disappeared far overhead in the shadow. A thin coat of gray stalagmite covered its surface, hiding the slope of rock and clay. We remembered a similar well at the cave of the *Trois Frères* which had yielded the bones of reindeer, panther, and bison. Here we must take a sounding.

We retraced our steps to the second of the main galleries. It led off to the left—low, broad, and draped from end to end with a glistening stalagmite curtain. From time to time we caught glimpses of the rock wall—ivory white. Tiny passages opened at either hand; a chimney mounted, mysterious, in the darkness. The curtain of stalagmite grew thicker; its folds

sent off stalactites; the stalactites became rods, then pillars, and at last a shining row of limestone trunks barred our way. Beyond, the gallery curved on and down.

Streaked with cave mud, we climbed out into the air again, Jean-Marie radiant—he had found the North-west Passage—the rest of the Expedition eager with conjectures and plans for the new season.

We would dig a trench in the clay bottom of the new gallery. Another at the foot of the landslide. We would explore the tiny tunnels, break through the final barrier of stalactites. . . .

But first of all, we must close the cave for the winter.

Seated on the narrow terrace at the entrance of the cavern, we looked down on the familiar valley—the roofs, the poplars, the yellow fields. To our ears rose familiar sounds—the noisy call of geese, the chatter of washerwomen by the stream, and the slow chant of the plowman:

Cuan lou bouié s'en ba laourà
Planto soun aigulhado,
A-o-u . . .

Life to-day.

Behind us, through the arched portal of the cavern, a path led away into another world. Down through the empty tomb of the Man of Montardit, down through the cold hearths of the Magdalenians, it stretched across the centuries to the distant Age of

Season's End

Stone—another life, rich and colorful as our own, but wrapped in mystery deep as the shadow of the hidden galleries, still unexplored, of the *Tuto Biouleto,* the Violet Hole.

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